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ABSTRACT

An extensive review of literature dealing with 263 technology-oriented vocational training programs was conducted to gather current information on the state of such training. Particular emphasis was placed on links between programs and government bodies or private sector entities and programs that could serve as models for those wishing to establish technology-oriented training programs. An overview of vocational education programs in the United States showed three approaches: (1) traditional school/business partnerships, (2) state-wide programs, and (3) trends embodied in the 1982 Job Training Partnership Act. Only one technology-oriented program was identified from 139 of the 182 educational institutions represented, with 2 programs being identified in 25, 3 programs in 7, and 4 programs in 8 of the remaining institutions. Of the 13 major types of training identified, electrical or electronics and computer-related programs represented the greatest level of effort. Only 54 of the programs indicated a specific population being served. Of these programs, 44 percent were geared toward upgrading or retraining workers, 20 percent represented apprenticeship programs, and 13 percent served disadvantaged clients. Because of the conspicuous lack of the kind of detailed data needed to draw replicable models, the Department of Education should fund a field study of 25 selected programs to develop such a model. (Appendixes to this report include alphabetical listings of identified training, companies, industries served by educational institutions and a list of educational institutions and types of identified training arrangements.) (MN)

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FINAL REPORT

"TECHNOLOGY-ORIENTED JOB PREPARATION"

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I. EXECUTIVE SUMMARY

Technological advances are rapidly changing the nature of work in all sectors of the U.S. economy. As recently as 1957, sixty-five percent (65%) of the population worked in manufacturing and related industries. Today, more than sixty-seven percent (67%) of the work force is engaged in generating, storing, manipulating and transmitting information.

The magnitude and speed of our technological transformation has provoked a great deal of thought and speculation about the future availability, location and nature of work in a rapidly changing economic environment. As an initial effort in addressing this rich theme, the Department of Education sponsored a study of "Technology-Oriented Job Preparation."

Based upon a survey and analysis of the recent literature, this study set out to:

- assemble all current information on the state of technology-oriented vocational education programs;
- analyze the literature to discern the roles of the principal players, the links between programs and government bodies and private sector entities, and the character of the programs themselves; and

- provide vocational education professionals, corporations, labor unions, professional associations, government officials at all levels, students, and the general public with a portrait of the state-of-the-art as well as a detailed picture of programs which could serve as models or guides for those wishing to embark on technology-oriented training.

Very early in the study it became apparent that the literature was voluminous. It also became clear that certain aspects of the subject had been addressed in great detail. There is a rich body of prescriptive or "theoretical" literature. The literature on the changing U.S. economy and the implications of this change for training, retraining and future employment is equally abundant; including general descriptions of federal and state legislative initiatives and economic development activities. Thus the first conclusion to emerge from this study is that there are ample sources from which one can develop a portrait of the state-of-the-art. This portrait is provided in Section III., Background, and Section V., Overview of Vocational Education Program Approaches, of this report.

The study's second - and more important - conclusion is that, for all its abundance, the current literature is conspicuously lacking in the kind of detail needed from which to draw replicable models. Section VI., Salient Characterristics of Programs Reviewed, provides a contour map of the two hundred sixty-three (263) programs documented in our primary educational data sources. Existing individual program descriptions, however, did not permit the development of a detailed guide to specific technology-oriented job training activities. Critically important questions left unanswered by the available literature include:

- how does one measure the success or failure of a particular program?
- what do we know about the potential earnings and the career paths of students after they pass through individual programs?
- what, in specific detail, is the relationship between the cost of training and certain skill levels achieved?
- what do individual case studies tell us about the dynamics between teachers and pupils?
- how long do certain programs normally take and under what conditions can they begin--e.g., student prerequisites?

It is this lack of needed detail which leads directly to the study's principal recommendation: The identification of useful, replicable models on which to build successful technology-oriented vocational education programs required indepth field study to obtain the kind of insights and information that comes from first hand experience of program dynamics. It is recommended that the U.S. Department of Education sponsor a field study of twenty-five (25) carefully selected programs located throughout the country.

Programs should be selected that represent diverse technology-oriented job training approaches, including those conducted at the high school, junior college, adult education levels as well as by corporations and private educational institutions. Criteria for measuring program excellence should be developed that include program dynamics, such as personal involvement and expanded use of resources, as well as specific program features and strategies used for continued program development. The end product of this activity should be not only a report to be aggressively disseminated but also a video taped package that is presented throughout the country in a variety of settings.

The training and retraining of America's workers in a fast-changing economy remains an urgent and fascinating problem. The contours of the problem have been discussed again and again. What is missing--and what we now need to have--are the details of truly imaginative and successful responses to this challenge. We believe that the kind of study we recommend will address this need.

II. INTRODUCTION

The economic history of the United States in the past fifteen (15) years has been characterized by a fundamental change: movement from an essentially industrial to an information or communication or computer society. While future historians will settle on the most appropriate term to describe this transformation, its essential nature is already clear. As recently as 1957, sixty-five percent (65%) of the population worked in manufacturing and related industries. Today, more than sixty-seven percent (67%) of the work force is engaged in generating, storing, manipulating and transmitting information.

The magnitude and speed of our technological transformation has provoked a great deal of thought and speculation about the future availability, location and nature of work in a rapidly changing economic environment. As an initial effort in addressing this rich theme, the Department of Education sponsored a study of "Technology-Oriented Job Preparation." This intensive research project sought to identify documented technology-oriented programs involving individual educational institutions, industries, specific companies, individual groups served and "prime movers" or entities responsible for program development and operation.

Many new and different actors are becoming involved in the planning and delivery of vocational education to meet contemporary technological needs. It is to this broad audience that this report is directed, namely:

- vocational educators in public and private educational institutions;
- vocational education practitioners on the federal, state and local levels;
- employers, labor unions, associations and professional organizations that have become increasingly involved in vocational education activities; and
- students whose occupational opportunities and choices are being shaped by our future world of work.

The individual programs identified in this report are best understood when viewed within the context of several complementary themes. The first involves an examination of the universe of high technology. A second involves a redefinition of key actors with respect to roles and functions. A third involves examination of recent economic developments and political trends. Critical elements of each theme are discussed in the following section.

III. BACKGROUND

A. THE UNIVERSE OF TECHNOLOGY

Terminology

Technology embraces the totality of means used to create objects and systems necessary for human sustenance and comfort. Accordingly, the study of technology-oriented job preparation cuts across all service areas of vocational education and includes evolving sequences of classroom and work experiences designed to prepare individuals for clusters of new job opportunities.

Today's literature is filled with discussion surroundings the concept of "high-technology" and its impact on our society. Many of the questions raised include: What precisely do we mean by high-technology? How large is this segment of the entire technological universe? What is its impact on the domestic and international economy? How many people are employed in high-technology enterprises? How do we best describe the common features of high-technology employment? The answers to these fascinating and important questions do not come easily, for the definition and implications of high-technology continue to evolve.

One example of the latitude used to define high-technology is provided by the Bureau of Labor Statistics (BLS) and was adopted by the Office of Technology Assessment. As depicted in Table 1, BLS uses three significantly different groupings in classifying high-technology industries.

TABLE 1: THREE DEFINITIONS OF HIGH-TECHNOLOGY INDUSTRY

SIC *	INDUSTRY	1**	2**	3**
131	Crude petroleum and natural gas	X	—	—
1321	Natural gas liquids	—	—	X
162	Heavy construction, except highway and street	X	—	—
281	Industrial inorganic chemicals	—	—	X
282	Plastic materials and synthetics	X	—	X
283	Drugs	X	X	X
284	Soaps, cleaners, and toilet preparations	X	—	X
285	Paints and allied products	X	—	X
286	Industrial organic chemicals	X	—	X
287	Agricultural chemicals	X	—	X
289	Miscellaneous chemical products	X	—	X
291	Petroleum refining	X	—	X
301	Tires and inner tubes	X	—	X
3031	Reclaimed rubber	—	—	—
324	Cement, hydraulic	X	—	—
348	Ordnance and accessories	X	—	X
351	Engines and turbines	X	—	X
352	Farm and garden machinery	X	—	—
353	Construction, mining, and material handling machinery	X	—	—
354	Metalworking machinery	X	—	—
355	Special industry machinery, except metalworking	X	—	X
356	General industrial machinery	X	—	—
357	Office, computing and accounting machines	X	X	X
358	Refrigeration and service industry machinery	X	—	—
361	Electric transmission and distribution equipment	X	—	X
362	Electrical industrial apparatus	X	—	X

TABLE 1: THREE DEFINITIONS OF HIGH-TECHNOLOGY INDUSTRY (Continued)

SIC *	INDUSTRY	1**	2**	3**
363	Household appliances	X	—	X
364	Electric lighting and wiring equipment	X	—	—
365	Radio and TV receiving equipment	X	—	X
366	Communication equipment	X	X	X
367	Electronic components and accessories	X	X	X
369	Miscellaneous electrical machinery	X	—	X
371	Motor vehucles and equipment	X	—	—
372	Aircraft and parts	X	X	X
3743	Railroad equipment	—	—	—
376	Guided missiles and space vehicles	X	X	X
381	Engineering, laboratory, scientific, and research instruments	X	—	X
382	Measuring and controlling instruments	X	—	X
383	Optical instruments and lenses	X	—	X
384	Surgical, medical, and dental instruments	X	—	X
3851	Ophthalmic goods	—	—	—
386	Photographic equipment and supplies	X	—	X
3872	Watches, clocks	—	—	—
483	Radio and TV broadcasting	X	—	—
489	Communication services, n.e.c.	X	—	—
491	Electric services	X	—	—
493	Combination electric, gas, and other utility services	X	—	—
506	Wholesale trade, electrical goods	X	—	—
508	Wholesale trade, machinery, equipment, and supplies	X	—	—
737	Computer and data processing services	X	—	X
7397	Commercial testing laboratories	—	—	—
7391	Research and development laboratories	X	—	X
891	Engineering, architectural, and surveying services	X	—	—
892	Noncommercial educational, sceintific, and research organizations	X	—	—
	1980 employment total (millions)	12.6	2.5	6.2

SOURCE: Technology, Innovation, and Regional Economic Development, Congress of the United States, Office of Technology Assessment (Washington, D.C. 1984)

(*) Standard Industrial Code
(**) High-Tech Employment Classification

Defined primarily by three-digit standard industrial codes (SIC), the three (3) groupings show 1980 high-tech employment at 12.6, 2.5 and 6.2 million respectively, according to different determinations of industries that are considered to be high-tech. In addition, it is unclear why SIC code 7397, Commercial testing laboratories, is not considered high-tech in any of the categorizations. The equipment and skills needed in such an operation would seem to fall within any reasonable definition of high-technology.

For the purposes of this study, the most broad definition, the first categorization, is adopted as a framework and a guide. And within this framework, we have developed a working definition of a technology-oriented worker as someone who, under supervision, operates or services a device that produces a product for technological use -- for example, graphs, computer readouts, machines and their components.

There are times in a history of a discipline when precise definitions may turn out to be counterproductive. The study of technology-oriented job preparation is currently at such a juncture. It is better, for instance, to draw the contours of a map than to try to locate, restrict and define its specific features.

Areas of Uncertainty

Not surprisingly, the study of technology-oriented job training is beset by many uncertainties. Two (2) deserve special attention: how many jobs will be created by high-technology industries?; and will these jobs require more, less or simply different skills than those possessed by today's labor force?

High-technology employment registered healthy growth in the decade 1972-1982: wage and salary workers in BLS category 1 increased by 20.1 percent. Although employment in high-technology is projected to grow in the period 1982-1995 at a robust pace exceeding thirty-two percent (32%), there is fundamental disagreement about whether new technologies will create new jobs or eliminate old ones. The prevailing, though by no means the conclusively established view, is that relatively few new jobs will be generated by high-technology because of its relatively small base to begin with. (In 1982, total wage and salary employment in our adopted definition of high-technology industries numbered 13.4 percent of total U. S. employment.) Economist Russell Rumberger of Stanford University argues that twenty (20) occupations will account for thirty-five percent (35%) of the new jobs during this decade, but only two (2) of them, elementary school teaching and accounting, will require college degrees.[1]

As shown in Table II, according to the Bureau of Labor Statistics, the most significant job growth will occur in such "low-technology" occupations as nurses' aides, fast-food workers and secretaries.

TABLE II. FORTY OCCUPATIONS WITH LARGEST JOB GROWTH - 1982 - 1985

Occupation	Change in Total Employment (in thousands)	Percent of Total Job Growth	Percent Change
Building Custodians	779	3.0	27.5
Cashiers	744	2.9	47.4
Secretaries	719	2.8	29.5
General Clerks, Office	696	2.7	29.6
Salesclerks	685	2.7	23.5
Nurses, Registered	642	2.5	48.9
Waiters and Waitresses	562	2.2	33.8
Teachers, Kindergarten and Elementary .	511	2.0	37.4
Truckdrivers	425	1.7	26.5
Nursing Aides and Orderlies	423	1.7	34.8
Sales Representatives, Technical . . .	386	1.5	29.3
Accountants and Auditors	344	1.3	40.2
Automotive Mechanics	324	1.3	38.3
Supervisors of Blue-Collar Workers . .	319	1.2	26.6
Kitchen Helpers	305	1.2	35.9
Guards and Doorkeepers	300	1.2	47.3
Food Preparation and Service Workers, Fast Food Restaurants	297	1.2	36.7
Managers, Store	292	1.1	30.1
Carpenters	247	1.0	28.6
Electrical and Electronic Technicians .	222	.9	60.7
Licensed Practical Nurses	220	.9	37.1
Computer Systems Analysts	217	.8	85.3
Electrical Engineers	209	.8	65.3
Computer Programmers	205	.8	76.9
Maintenance Repairers, General Utility.	193	.8	27.8
Helper, Trades	190	.7	31.2
Receptionists	189	.7	48.8
Electricians	173	.7	31.8
Physicians	163	.7	34.0
Clerical Supervisors	162	.6	34.6
Computer Operators	160	.6	75.8
Sales Representatives, Nontechnical . .	160	.6	27.4
Lawyers	159	.6	34.3
Stock Clerks, Stockroom and Warehouse .	156	.6	18.8
Typists	155	.6	15.7
Delivery and Route Workers	153	.6	19.2
Bookkeepers, Hand	152	.6	15.9
Cooks, Restaurants	149	.6	42.3
Bank Tellers	142	.6	30.0
Cooks, Short Order, Specialty and Fast Food	141	.6	32.2

NOTE: Includes only detailed occupations with 1982 employment of 25,000 or more.
Data for 1995 are based on moderate-trend projections.
SOURCE: Bureau Labor Review, Monthly Labor Review, November, 1984.

The example of secretaries leads directly to a second important area of uncertainty -- the degree to which high-technology jobs will require more or less skilled workers.

One view -- the upskilling argument -- is that new office technologies will upgrade skill requirements of existing jobs because of increasingly sophisticated equipment. In the office and in the factory, workers will need to be more technologically literate than in the past.

A contrary view -- the deskilling argument -- is that the current trend in many high-tech job areas is clearly toward greater simplification and the need for fewer skills rather than more. The probability of deskilling is even more likely than in the past because we live in a technological era characterized by "smart" electronics. To cite just one example, word processing makes it possible for a poor typist to produce work equal in quality to an excellent traditional typist. Thus lack of ability is overcome by technological "smarts".

High Expectations

Notwithstanding the uncertainties discussed above, great expectations have been attached to the development of high-technology and its job-creating possibilities. Perhaps few subjects have received so much attention in recent years. In February, 1983, more than three hundred (300) top executives from high-technology industries and government gathered in

Washington, D. C. to debate the federal government's role in this sector. Strong and consistent federal support for basic research and development was recommended. Perhaps most important, was the repeated call for adequate educational funding, particularly education in the sciences and mathematics at all levels.

With few exceptions, this publicity has been characterized by a sense of optimism and opportunity. The country's major newspapers have devoted numerous special supplements to high-technology, a term which has accordingly become part of our vernacular. The outlook of the Tennessee Governor's Task Force on high-technology is a typical example: "Most of the new jobs that will be developed in the 1980s and 1990s will be in the high-technology industries. High-technology is the wave of the future."[2]

The lure of high-technology has led to a lively competition among cities and states to attract these industries. High-technology firms have been offered a variety of incentives, including tax breaks, industrial revenue bonds, industrial parks, venture capital, and offers to train workers.

A striking example of the prestige attached to high-technology institutions is provided by the Microelectronnics and Computer Technology Corporation recently located in Austin, Texas. In order to win the national competition for locating the corporation:

- an anonymous donor committed $8 million; foundations matched it; and the University of Texas matched the

20

total to come up wtih $32 million and thirty-two (32) endowed chairs in computer science and engineering;

- the University of Texas pledged to provide the corporation with a building at a nominal rent;
- the corporation was guaranteed a mortgage loan package of $20 million at a fixed rate two points below FHA;
- the City of Austin promised to fund and operate a spouse job placement center;

What is especially instructive about this impressive cluster of incentives is that, in all, the corporation will not employ more than six hundred (600) people. Apparently fall-out from the operation is expected to be far-reaching and to ultimately return to society much more than the creation of six hundred (600) jobs.

B. THE MAJOR INSTITUTIONAL ACTORS

The study of technology-oriented job preparation is complicated and made all the more interesting by virtue of the numerous actors playing significant roles. Each bring to bear their own unique perspectives, skills and resources. And each could well be the subject of a separate study. Here we simply want to draw attention to the major actors and briefly describe their roles.

The Federal Government

As a source of funding and legislation, as well as in the capacity of the sponsor of technical studies and statistical surveys, the federal government maintains a major role in this arena.

In the recent past, Congress has rushed to make science education and high technology a national priority by proposing two hundred (200) pieces of new legislation.[3] Discussed at some length further in this study, the most significant legislation to flow from the federal government was the Job Training Partnership Act (JPTA), implemented in October, 1983.

States/Local Education Agencies

Vocational education is no less a traditional state activity than education itself. A source of policy guidance and information, as well as a monitor of how federal programs are being implemented, states are active participants in the vocational education field. In the past few years, local communities have assumed a greater role than in the past -- largely in response to the growing recognition of almost everyone working in this field that the best training programs are the ones most deeply rooted in and sensitively respondent to the local economic environment.

Public Education Institutions

As was recently recognized in the 1985 American Association of Community and Junior College's (AACJC) Public Policy Agenda, a clear image of public education institutions as centers of excellence has been lacking. Schools and programs differ from state to state with respect to governance structures, funding types and amounts, variations in size of school districts and populations served and differences in types of programs, instructional approaches and activities to support job-specific preparation.

Private Education Institutions

Private vocational education is a large business indeed in the United States. There are currently eight thousand (8,000) licensed proprietary schools, the largest being the National Education Corporation in Newport, California, which now runs forty-nine (49) trade schools across the country with enrollment of thirty-five thousand (35,000).[4]

Employers/Businesses

More training skills are provided in-house by employers than by outside programs designed for high-tech education.[5] No one knows how much industry spends annually on training and education. The American Society for Training and Development, a trade group for corporate training officials, estimates spending at about $30 billion in 1980, about twice the level of federal training programs, including those for the military.[6] A recent survey of seven thousand, five hundred (7,500) private corporations disclosed that fifty-four percent (54%) offer functional/technical skill training[7] and thus must spend a substantial amount on this activity.

Labor Unions

Prompted by recent economic dislocations and the advent of high-technology, in the past few years the nation's trade unions began to emphasize different issues than in the past. In 1982, for example, Ford Motor Company and the United Auto Workers contract established an $8-9 million training fund for workers; the 1983 American Telephone & Telegraph Company and the Brotherhood of Electrical Workers/Communication Workers of America reached an agreement covering six hundred seventy-five thousand (675,000) union workers which stresses job security and retaining provisions. Under the agreement the company is creating a $36 million training fund.[8]

Associations/Professional Organizations

The American Vocational Association (AVA), the American Association of Community and Junior Colleges (AACJC) and countless other organizations are mobilizing their members to become and stay involved in the continuing debate on the role and performance of vocational education. Members are urged to become informed on the status of discussions on local, state, and national policy changes, to participate in coalitions with key interest groups and build on current linkages; and to enhance the public's understanding of innovative training approaches that utilize different combinations of resources. The emphasis on coordinated activities and shared resources is a significant departure from the prior competitive environment in which such organizations functioned.

Publications such as "Voc Ed" (AVA's journal) and the "Community and Junior College Journal" provide extensive information on all levels of vocational education activities. Given the emerging emphasis on local specialized programs, these publications provide a crucial role in communicating ideas and practices to various types of audiences.

The Media

The nation's communication media play an increasingly important role. They do so by virtue of publicizing technical and economic developments and shaping public perceptions about these developments. Increasingly, the media is becoming an educational tool, used in schools, factories and businesses. To cite just one example of great potential importance in the vocational education field, modern tele-communications make it possible to train many people in-house; vocational education need no longer necessarily take place at a "school".

C. THE CONTEXT

Long-Term Shifts

The literature, the thinking, the programs, and the legislation regarding technology-oriented job preparation has been profoundly shaped by the economic, demographic and political context within which it was conceived.

Three especially significant long-term shifts or developments stand out in any overview of the recent past.

- First, there is the demographic shift characterized by extensive population and job losses in Northeast and North Central regions and high population and job gains in the South and West. In the twenty-year period 1960-1980, the population grew by 42.2 percent in the South Atlantic region, by fifty percent (50%) in the Pacific region, and by 65.8 percent in the Mountain states. In sharp contrast, the population grew by only 7.6 percent in the Mid-Atlantic region and by fifteen percent (15%) in the East North Central states.[9]
- A second long-term shift has been the migration of people and jobs out of the nation's central cities.
- Third, we are moving from an essentially industrial to an information society. As recently a 1957, sixty-five percent (65%) of the population worked in manufacturing and related industries.

Today, more than sixty-seven percent (67%) of the work force is engaged in generating, storing, manipulating and transmitting information. Indeed, "for those who like to pin changed direction on one date, the year 1957 is a good one, for it was in that year that the number of white-collar workers...exceeded for the first time the number of blue-collar workers."[10]

Recent Economic Developments

Many of the programs with which this study is concerned were developed as the United States was going through the most severe recession since the Great Depression. In September, 1981, industry was operating at only 69.1 percent of capacity.[11] By December, 1982, there were approximately 12 million people unemployed and another 5 million were working fewer hours than they would have liked.

The recession made it difficult to distinguish between long-term structural change and temporary economic cycles.

Nevertheless, there was a general consensus that even with economic recovery some traditional American industries (steel, for example) were unlikely to ever regain their former stature and that millions of workers would have to find new occupations. In this context, retraining took on a new urgency and significance.

Recent Political Trends

In retrospect, it now appears that the Presidential election of 1980 was a significant milestone. President Reagan set out to reduce the role of the Federal government and whenever possible, allow the free market and local communities to determine how and where our resources should be used. The first Reagan Administration, and the election of 1984, showed that there was widespread support in the country for this approach to economic and social problems. In the context of this study, it is significant that the original sponsor of the Job Training Partnership Act (JTPA) was Senator Orrin Hatch, the Chairman of the Senate Labor and Human Resources Committee and one of the Senate's most conservative members. JTPA's emphasis on a partnership with business and on the role of local economies and institutions clearly reflects the prevailing political context.

The Global Context

Finally, the study of technology-oriented job training should also be placed in a global context, for today's technologies are integral parts of a world economy. It seems clear, for example, that a number of high-technology related jobs have flowed outside of this country in an attempt by high-tech manufacturing companies to pursue cheap labor around the globe. Every sizable merchant semiconductor manufacturing firm has one or more assembly plants in low cost labor intense areas like east Asian countries, including Thailand, Indonesia, Singapore, Malaysia, the Philippines, Hong Kong, Taiwan and South Korea.[12] Indeed, according to the Semiconductor Industry Association, about ninety percent (90%) of U.S.-made microchips are sent outside the country, generally to the Far East, for final assembly and packaging.

Global trade in engineering products has been growing at a rapid pace and as the pie has grown so has the competition. Significantly, this competition goes beyond economics: political strength and national security issues often come into play. Consider as one example the opening language of an excellent recent publication on high-technology policies among five nations: "High-technolgy industries provide the cutting edge for U.S. international competitiveness. They contribute significantly to economic growth, trade performance and national security and play a central role in shaping the direction of progress in the national economy."[15] The large, highly developed nations are not alone in attributing great importance to high-technology. "The high-technology ambitions of small and developing countries were illustrated recently by Avraham Suhami, Chairman of Elscint, an Israeli medical imaging equipment company that generates ninety-seven percent (97%) of its revenues outside Israel. Since high-technology industries average $100,000 in output per employee, Suhami proposes to solve Israel's $5 billion annual balance-of-payments deficit by building up high technology industries. When employment reaches 200,000 workers, translating into $20 billion of output, high-tech exports should be earning sufficient revenues to wipe out the trade deficit."[14]

FOOTNOTES

[1] Russell W. Rumberger, *Forecasting the Impact of New Technologies on the Future Job Market*, (Washington, D.C.: Washington Institution for Research on Education, Finance and Governance, 1984), pp 50-51.

[2] Kenneth F. Huddelston and Dorothy Fenwick, "The Productivity Challenge: Business/Education Partnerships," *Training and Development Journal*, April, 1983, p. 1.

[3] "America Rushes to High Tech for Growth," *Business Week*, March 28, 1984, p. 84.

[4] "Trade Schools Go High Tech," *Business Week*, July 4, 1983, p. 85.

[5] "America Rushes to High Tech for Growth," *Business Week*, March 28, 1984, p. 85.

[6] John Fox Sullivan, *High Technology Public Policies for the 1980's*, (New York, N.Y.: Thomas Publishing Company, 1983), p. 28.

[7] Robert E. Wenig and William D. Wolansky, *Employer Sponsored Skill Training*, (Columbus, Ohio: National Center for Research in Vocational Education, 1983), p. 19.

[8] Dale Parnell, "Putting America Back to Work: The Kellogg Leadership Initiative, (Wshington, D.C.: American Association of Community and Junior Colleges, 1984), pp. 27-28.

[9] Wenig and Wolansky, pp. 32-33.

[10] Parnell, p. 17.

[11] Parnell, p. 11.

[12] Parnell, p. 9.

[13] Richard R. Nelson, *High Technology Policies, A Five Nation Comparison*, (Washington, D.C.: American Enterprise Institute for Public Policy Research, 1984), p. ix.

[14] Nelson, p. 59.

IV. METHODOLOGY

Introduction

This project is based on an extensive literature review documenting current vocational education programs used to prepare students for technological-oriented occupations. Primary data sources included:

- MUMS and SCORPIO automated data systems available at the Library of Congress;
- DIALOG Information Retrieval Service, which includes a variety of educational and technology data bases; and
- A specialized data base search performed by the National Alliance of Business.

The following sections describe the general approach used to access the above reference services, the development of computerized individual program records, and the analysis of available information on identified vocational education programs.

A. REFERENCE SERVICES

One America utilized several reference services to prepare a state-of-the-art review of technology-oriented vocational education programs. Initial activities included computerized data searches of MUMS and SCORPIO, the major educational files available through the Library of Congress.

Several descriptors were used to identify articles describing technology-oriented vocational education program activities, a discussion of model programs and criteria of success, the impact of technology on vocational education and major labor market trends. Descriptors used included:

- Vocational education;
- Occupational training;
- Occupational retraining;
- Career education;
- Learners, industrial;
- Technical education;
- Vocational guidance;
- Vocational rehabilitation;
- Vocational qualifications;
- Educational planning;
- Employee, training of;
- Employment forecasting;
- Occupational surveys;
- Manpower training programs;
- Labor supply;
- Manpower policy; and
- Manpower utilization.

The number of documents reviewed and the types of information obtained are summarized by Table IV-1. While

TABLE IV-1

MAJOR INFORMATION SOURCES

DATA BASE	ITEMS REVIEWED	TOPIC DESCRIPTION
MUMS	50	Books on Voc Ed programs, job training, technology
SCORPIO	320	Articles, congressional hearings, papers on labor force trends, occupational training, manpower development
ERIC	250	Articles, studies on Voc Ed programs, problems, alternatives, equity, effectiveness, guidance, career development, retraining, information systems, evaluation, future implications
FOUNDATION GRANTS	20	Technical or Voc Ed Projects funded in 1984
NICEM (AV-On Line)	4	Voc Ed program video taps, slides
GRANTS	11	Local and regional teacher development grants
MAGAZINE INDEX	70	Articles on vocational school activities, impact of technology on education, role of industry, JTPA
ENCYCLOPEDIA OF ASSOCIATIONS	43	Description of major associations with Voc Ed involvement, current activities, publications
BUSINESS INDEX	65	Articles on technology, impact on industry, and job training programs
NATIONAL ALLIANCE OF BUSINESS	32	Current job training programs, role of PIC's, involvement by organized labor

these data provided a wealth of information concerning vocational education program issues, data obtained through DIALOG computer searches yielded extensive information on individual vocational education programs.

The use of DIALOG required development of extensive search strategies for each of the data bases identified in Table IV-1. Search strategies were developed by combining many of the descriptors identified earlier. For example, ERIC, one of DIALOG's largest data bases, contains over five hundred twenty-seven thousand (527,000) records updated monthly. The ERIC file is divided into Resources in Education, which lists current research reports and projects, and Current Index to Journals and Education, which includes over seven hundred (700) periodicals. Based on how this massive data base has been developed, various information sources can be identified when requesting "vocational (with) education" or "vocational education (with) programs." Considerable effort was devoted to identifying those activities that support the project's defintion of a technology-oriented worker described in Section III and the basic criteria sought to develop individual program records described in the following section.

B. DEVELOPMENT OF PROGRAM RECORDS

Table IV-2 identifies the basic program record developed to document available information on identified programs. A computerized summary of all records is provided

TABLE IV-2

ONE AMERICA, INC./U. S. DEPARTMENT OF EDUCATION

TECHNOLOGY-ORIENTED JOB PREPARATION CONTRACT

STANDARD DATA FORM

State ______________________________

Educational Institution

Name ______________________________
Location ______________________________
Level ______________________________

Industry/Business

Name ______________________________
Location ______________________________
Title of Program ______________________________

Funding

Sources ______________________________
Amount ______________________________

Type of Training

____
____

Specific Activities

Who ______________________________
What ______________________________

References

____
____

Contact Person

____
____

in Appendix A. Much of the data on the computerized form is condensed due to the lack of specificity in individual program descriptions. For example, only in rare instances was the following information provided:

- Identification of program title;
- Total amount(s) of funding;
- Clearly identified sources of funding;
- Description of curricula, based on weeks scheduled to obtain an individual competency;
- Clearly identified shared responsibilities among the educational institution, specific business involvement and other actors;
- Information on program development strategies; and
- Program evaluation data, such as cost per pupil.

The final computerized project data base lists the following:

- State and educational institution;
- Company or entity involved in the training activity;
- Type of business activitiy of identified company or entity;
- Type of shared arrangement described between the educational institution and identified business, including contractual, customized, cooperative, resource sharing and apprentice training; and
- Type of training described.

C. DATA ANALYSIS

The computerized data base was sorted in a number of ways to determine significant program characteristics. These included:

- Alphabetically by State and their Institutions, and the Identified Arrangements;
- Alphabetically by Arrangements, and by State and their Institutions;
- Alphabetically by State and their Institutions, and the identified Training offered;
- Alphabetically by Training offered, and by State and their Institutions;
- Alphabetically by State and their Institutions, and the identified Company Names;
- Alphabetically by Company Names and by State and their Institutions;
- Alphabetically by State and Institution, by Main Support (or Primary Support), and by Industry served, and showing Specific Groups addressed if available from the reference; and
- Alphabetically by Industry served and by State and their Institutions, and their Main or Primary Support.

Additional appendices include listings that yielded the most significant data and were used to develop Section VI, Salient Characteristics of Programs Reviewed, of this report. These listings include:

- Appendix B - Alphabetical listing of identified training by educational institution;
- Appendix C - Alphabetical listing of identified companies by educational institution;
- Appendix D - Alphabetical listing of industries served by educational institutions and main support; and
- Appendix E - Alphabetical listing of educational institutions and types of identified training arrangements.

V. OVERVIEW OF VOCATIONAL EDUCATION PROGRAM APPROACHES

Introduction

An overview of vocational education programs in the United States shows that there have been three prevailing approaches:

1. Traditional school/business partnerships;
2. State-wide programs; and
3. Recent trends embodied in the 1982 Job Training Partnership Act (JTPA).

Discussed in sequence in the following pages, these approaches constitute a rich mix from which educators, businesses, and public officials can draw a number of possible general models.

A. TRADITIONAL SCHOOL/BUSINESS PARTNERSHIPS

First characterized as a "helping hand" philosophy, business participation and support for public schools evolved into the well known "adopt-a-school" youth program model. While the primary focus of this model is on the transition from school to work, this national movement incorporates many elements used to create and sustain cooperative relationships:

- programs are designed and managed at the local level;
- needs and resources are matched and formally defined;

- proximity of location is recognized as important to develop and maintain a working relationship; and
- commitment of the school principal and the chief executive officer is fully communicated to teachers, employees and students.

"Adopt-a-school" business partnerships operate as city-wide programs centrally administered by the school board (Oakland's Unified School District involving forty-one (41) schools), a single company with the school in the immediate vicinity (Seattle First Bank offers Roosevelt High School students revolving internships in its computer department) and school-wide efforts managed by a business/education intermediary organization (New Orleans Metropolitan Area Committee's efforts have resulted in a program involving 40 companies and 29 junior and senior high schools).

One-to-one relationships and system-wide partnerships are two of the primary public/private sector partnership strategies being expanded today to meet the needs for new technology training. Collaborative councils represent a third major partnership strategy. Although some form of a council is generally used to stimulate cooperation between education, business and other related sectors, the structures and functions of collaborative councils vary widely.

States wishing to participate in programs funded by the Vocational Education Act of 1963 were required to form State

Vocational Advisory Councils. Eligible recipients were, in turn, required to establish local advisory councils to promote and coordinate individual programs. Thus, collaborative councils developed, under a plethora of names, including education/work council and industry/labor/education council, throughout the 1970's. General local advisory councils were established to assist in the development and implementation of a comprehensive vocational education program administered by a local school system. Today's State Technical Committees promote a closer working relationship of business and education by identifying skills and competencies needed in occupational areas.

A second type of local advisory council, the craft committee, was developed to recommend methods of instruction, curriculum content and competencies for specific program areas. While general advisory council members include employers, labor representatives, and governmental and civic leaders; craft committees are primarily composed of persons employed in the occupation for which the training is being conducted. In both instances, such councils focus on the relevance of vocational education curricula and activities to the world of work.

The efforts of general advisory councils have been promoted through the National Association for Industry-Education Cooperation (NAIEC). Founded in 1964, NAIEC has served as a forum to identify areas of mutual industry/education address a range of cooperative activities, including commitment of resources, personnel qualifications, materials and unique services. In these instances, the emphasis is directed toward the provision of effective planning for career education activities rather than the curricula focus of state and local vocational advisory councils.

An additional collaborative council type, traditionally known as work/education councils, developed specifically to support transitions from school-to-work. Beginning in 1976, the National Manpower Institute, the National Alliance of Business and AAGC were funded to perform demonstrations in thirty-two (32) communities by the Department of Labor. Councils were established to develop projects based on locally perceived needs of targeted-group youth populations. As an agent for change in the community, such groups operate as independent, not-for-profit, policy-making entities. Many of these councils have served as forerunners to the Private Industry Councils (PICs) operating today under the JTPA.

Specific ties between secondary education institutions and employers were formalized in 1924 through a movement known as cooperative education, when employers provided paid opportunities to Dayton, Ohio, high school students. The many advantages of this type of arrangement include:

- on-the-job training (OJT) on state-of-the-art equiment;
- clear link between work-experience and job placement;
- increased coordination between classroom instruction and OJT; and
- formalized business role based on a financial investment.

Although cooperative education has represented only a fraction of vocational education approaches at the secondary level, it is a partnership strategy that has been widely used at the community college level. This approach was expanded in the 1970's to a practice known as contracting-out by education. Leading examples include community colleges contracting out all occupational training to industry, while providing only supplemental instruction in the classroom. In some cases, the supplemental instruction has been contracted to other schools in order to avoid duplication of facilities. This practice is especially efficient in instances where limited employment opportunities do not warrant the establishment of a special course.

A contrasting trend has involved industry contracting with education. Although it has been estimated that a significant percentage of industry's annual operating funds is allotted for internal training and education, some educational institutions have been successful in convincing industry to contract out training. Such programs develop when education takes the following initiatives:

- identify industry's training needs;
- develop efficient, cost-effective programs; and
- treat programs as a business, earning profit for the institution.

The most recent vocational education thrusts involve partnerships for economic development. Specific job training and occupational education programs are developed to attract new industry or to expand existing ones. The opportunity to develop a well-trained work force is being cited increasingly in the literature as a major factor used by employers in deciding a plant location.

AACJC reported that North Carolina was the number one state in recruiting new industry in 1983. During the last seven years, two hundred thirty-four thousand, seven hundred and fifteen (234,715) jobs have been created by five thousand, two hundred and thirty-seven (5,237) new and expanding industries. This state created the nation's first training service designed specifically to support industrial growth. One of North Carolina's most recent successes involves attracting a new $35 million silicon wafer manufacturing plant based on the availability of training at Durham Technical Institute, one of the state's fifty-eight (58) community colleges.

Table V-1, represents a compiliation of the number of critical elements repeatedly documented for sustaining each of these various relationships. The complementary themes

TABLE V-1

CRITICAL ELEMENTS FOR CREATING AND SUSTAINING COOPERATIVE RELATIONSHIPS

I. COMPLEMENTARY THEMES

- A. Personal involvement.
    - 1. Visible and personal commitment from top management.
- B. Networking.
    - 1. Climate of effective communication by which partnership exchanges of ideas and bartering of resources develop via informal as well as official exchanges.
- C. Systematic management of program planning and start-up.
    - 1. Activities designed to stimulate and maintain active involvement. Emphasis should be on human resources as well as financial and material resources.

II. PROGRAM FEATURES

- A. Responsibilities and allotment of time defined in writing (corporate coordinators may underestimate time and energy demands).
- B. Education administers should approach Chief Executive Officer (CEO) in the company of someone whose judgement the CEO respects.
- C. Ceremonies are important to strengthen mutual commitments at various program development stages.
- D. In selecting potential partner, proximity can be as important as matched needs and resources - aids collaborative efforts.
- E. Recognize that matched talents, interests and areas of expertise shape projects. Projects require time to develop and the final form may differ from what was initially perceived.
- F. Non-profit civic and other community groups are affective in assisting early program development.

Source: National Commission
For Employment Policy

TABLE V-1

CRITICAL ELEMENTS FOR CREATING AND SUSTAINING COOPERATIVE RELATIONSHIPS
cont'd.

G. Contributions of corporate volunteers should be recognized formally.

H. Recognize that partnerships require redefinitions of traditional roles and responsibilities and that trust develops gradually.

I. A major change in circumstances after the terms of the partnership (new top leadership), major layoffs, etc.).

III. SYSTEMATIC MANAGEMENT

A. Development of awareness.

B. Needs assessment.

C. Setting program goals.

D. Defining objectives.

E. Identifying potential resources.

F. Designing the program.

G. Implementing the program: recruitment, orientation, training, assignment, retention and recognition.

H. Evaluation.

IV. RECOMMENDATIONS FOR CONTINUED DEVELOPMENT

A. Additional study of partnership process - including political, social, economic and other factors.

B. Tracking established and developing business - school partnerships to focus on elements of longevity.

C. Intensive analysis of educational processes in varied programs related to employment aims and synthesis into forms that can be used by education and business representatives in both creating and managing programs.

D. Developing and strengthening local and regional networking mechanisms for technical assistance in helping embryonic partnerships mature.

SOURCE: National Commission
For Employment Policy 38

of personal involvement, networking and systematic management are shaped by the specific local setting, the environment in which the majority of education/ business partnerships are planned, managed and delivered. Although program features vary extensively based on a spectrum of choices, cooperative relationships evolve when key actors move beyond traditional patterns of activities. Education and business should examine their own organizational capabilities, establish ties with an array of community resources, and examine projected change in policy, processes, jobs and the relationships among all entities. Systematic management and recommendations for continued development should include the principles of strategic planning, a planning approach that accounts for tracks and assesses rapid change.

B. STATE-WIDE VOCATIONAL EDUCATION APPROACHES

State-wide education/training approaches have been directed by what governors, mayors and civic leaders have determined to be best suited for a specific area. For example California, North Carolina and Massachusetts have pursued high-technology innovations; New York and Alabama have focused on the development of service industries.

State-wide activities are subject to many external forces. As previously indicated, the recent recession had a greater impact on the Northeast and Midwest than on the South and West.

Unfortunately, the impact of these issues is not readily apparent in national data traditionally collected on vocational education activities. Annual vocational education state plans and accountability reports for individual states typically outline administration and operations procedures, evaluation goals, management information needs, as well as broad accomplishments and priorities. These reporting requirements are not geared toward strategic planning based on rapid change and interaction with other governmental and private entities.

A 1984 national survey of Area Vocational-Technical Schools by State was conducted by the Center for Vocational, Technical and Adult Education at the University of Wisconsin. The study identified the differences in populations served, governance structures, and perceived needs. Major findings include:

Populations Served

- Three (3) states (Hawaii, North Carolina and Wyoming) do not have area vocational schools.
- Sixty percent (60%) of the states serve secondary, post-secondary and adult students.
- Four (4) states (Georgia, Montana, Nebraska and South Dakota) do not serve secondary students.

Governance Structures

- Twenty-five (25) states administer programs solely by local boards.
- Nine (9) states utilize a special area board, comprised of a direct administrator and school board members from secondary school districts.
- Five (5) states have area schools under a state board of education.
- Eight (8) states have local boards and special area boards sharing authority with the state board.

Major Needs

- Salaries for vocational instructors should be improved to be more competitive with industry.
- The image of vocational education should be improved.

Of the fifteen (15) remaining needs identified, none were directed towards the way in which educational institutions should develop ties with other entities in responding to the rapid change in our environment.

Data which directly address state activities to support technology-oriented job preparation resulted from a 1984 survey reported in "High Technology". (January, 1983) The findings from Table V-2 are discussed below:

1. High tech development programs are defined as stateowned technology corporations, councils that direct R&D activities, or well developed science parks.
2. Task force or council is defined as a non-funded group to study a state's high technology potential or a standing commission that makes policy recommendations to the governor. A task force is often a first short-term initiative that is later dissolved.

TABLE V-2
STATE "HIGH-TECH" INCENTIVES

			High Technology Education			Labor and Technical Assistance		Capital Assistance Programs		Venture Capital	
	(1) High Tech Development Programs	(2) Task Force or Council	(3) University-Based Centers	(4) Research Grants	(5) Other University Programs	(6) Industry Training w/State Funds	(7) Technical Assistance	(8) State Loans	(9) State Grants	(10) Public Venture Capital Programs	(11) 1983 Distribution (%)
STATE											
AL			<3			Yes			1		
AK								1			
AZ		Advisory Board	<3	Yes	Teacher Training	Yes	2	1			
AR	1		<3			Yes	2	1			
CA	1		<3	Yes		Yes		1			
CO	1		<3			Yes	1	1			47.7
CT	2	Council		Yes	Scholarships	Yes	1	2	1		3.2
DE			<3	Yes		Yes				Venture	
FL	1	Council	<3		TV engr courses	Yes	1				2.6
GA	1	Council	<3		Res consortium	Yes	1	1			
HI	1		<3				1	2			
ID			<3			Yes		1			
IL	2		<3		HS programs	Yes	2	1	1	Seed	2.0
IN	1		<3	Yes		Yes	3	2	1	Corp	
IA	1		<3	Yes	Financial incentives	Yes	1	1	1	Venture	
KS	2		3-4	Yes		Yes		1			
KY			<3			Yes	1	1			
LA	1		<3	Yes		Yes	2	1	1	Corp	
ME	1		<3	Yes		Yes	2	1	1	Corp	
MD	2	Task Force	<3			Yes	2	4			
MA	2		>5	Yes	Teacher training	Yes	3	2	1	Venture	12.1
MI	2		3-4	Yes	Dbase net	Yes	3	1	2	Retmt	
MN	1	Council Adv Comm	<3		Computer network	Yes	2	1.			
MS	1		<3			Yes	1	1			
MO	1		<3	Yes		Yes	2	2			

SOURCE: High Technology, January, 1985

TABLE V-2
STATE "HIGH-TECH" INCENTIVES (cont'd.)

			High Technology Education			Labor and Technical Assistance		Capital Assistance Programs		Venture Capital	
STATE	(1) High Tech Development Programs	(2) Task Force or Council	(3) University-Based Centers	(4) Research Grants	(5) Other University Programs	(6) Industry Training w/State Funds	(7) Technical Assistance	(8) State Loans	(9) State Grants	(10) Public Venture Capital Programs	(11) 1983 Distribution (%)
MT		Council	3-4			Yes		1		Corp	
NE							1	1			
NV		Study					1	1			
NH	1		<3			Yes	2				
NJ	1		>5	Yes		Yes	3	2			2.2
NM	1	Committee	>5	Yes		Yes	2	2	1	Venture	
NY	2		>5	Yes	Scholar-ships	Yes	4	3	1	Venture	5.4
NC	2		3-4	Yes	Math and Science HS	Yes	2		1		
ND			<3			Yes		2			
OH	1		>5	Yes		Yes	2	2	1	Retmt	
OK		Council	<3		NASA comp dbase	Yes		2			
OR			<3	Yes	High tech educ cncl council	Yes	3	3		Retmt	2.1
PA	2		>5	Yes	High tech summer sch	Yes	2	2	2	Seed Venture	2.2
RI	1		<3			Yes	1	3			
SC	1	Task Force	<3			Yes	3	1			
SD						Yes					
TN	1		<3	Yes	Science alliance	Yes	1				
TX	1	Council	3-4	Yes		Yes	1	1			5.1
UT	1	Council	<3	Yes		Yes	1	1	1	Seed Retmt	
VT						Yes	1	1			
VA	1		3-4			Yes	1	1			
WA	1		3-4	Yes	TV engr courses	Yes	1	1		Retmt	2.0
WV			<3			Yes	1	1			
WI	1		<3	Yes		Yes	1	1			
WY			<3			Yes	1	1			

SOURCE: High Technology, January, 1985

3. University-based centers specialize in different areas of advanced technology, such as robotics or biotechnology.

4. Research grants are used to induce industries to work with universities to develop new products or technologies. In most cases, industries provide the greater portion of the funds.

5. Other university programs include advanced education programs that are not linked to specific centers, including: college math and science for gifted high school students, televised courses for engineering students, etc.

6. Industry training with state funds include customized job training to new or expanding companies. JTPA funds often supplement thes programs, and unemployed residents can be trained at no cost to the company or the worker.

7. Technical assistance is often provided by the state high tech development agency. Some state commerce departments act as brokers, bringing together inventors and venture capitalists.

8. State loans are defined as direct loans offered by the state through economic development departments or loan authorities.

9. State grants include capital assistance funds earmarked for start-up or expanding companies or new product development outside of a university setting. They are often part of a high technology development program or a publicly sponsored venture capital fund.

10. Public venture capital program activities include state-financed seed or venture capital funds, legislative authorizations to invest portions of retirement funds, and publicly chartered but privately managed corporations for innovation development.

11. The 1983 percentages for geographical distribution of venture capital attracted by companies are presented. Eleven (11) states accounted for 86.6% of the total.

These data point to new relationships being developed to support high-technology growth. Key issues to be considered in targeting programs include potential changes in allocation of funds and resources, developing new ties to existing structures and special incentives to attract and expand business.

It is in this context that the previous data presented on state plans and accountability reports as well as program scope and governance structures become more meaningful. As efforts are undertaken for strategic program planning, it can be helpful to compare similar priority areas from annual reports or governance structures with the newly developing economic develop activities outlined in Table V-2.

C. THE JOB TRAINING PARTNERSHIP ACT (JTPA)

The 1982 Job Training Partnership Act (JTPA) is designed to address two pressing national problems: high structural unemployment among youths and adults; and displaced workers with technologically obsolete skills. A major difference from JTPA's predecessor, CETA, is the enhanced involvement of the private sector through local Private Industry Councils (PIC's). PIC's, which include representatives of the private sector, educational agencies, community based organizations, labor unions, rehabilitation agencies, economic development agencies and public employment services, are required to enter a formal written agreement with local governments that stipulates the implementation of the Act. Unlike the earlier described councils that primarily act in advisory capacities, the PIC defines both its own role and the structure of the decision making process within a Service Delivery Area (SDA).

A number of model systems used to administer JTPA are identified in the National Alliance of Business' Whole PIC Catalog: Organization, Planning and Service Delivery Options Under JTPA. Models include systems administered by the PIC, local government, non-profit organization, for-profit company, or a combination of local government, PIC and private non-profit. Although no one model is identified as the best way to administer the program in a given jurisdiction, these various administrative structures point to innovative options that can be used to address differing local circumstances.

The National Alliance of Business also performed a 1984 study of the links between JTPA and Educational Institutions. Findings include the following:

- Of the five hundred thirty-eight (538) SDA's surveyed, PIC membership is comprised of an average of fifty-five percent (55%) private sector representatives; 33.8% organized labor, public agencies and community groups; and 11.2% educational representatives.

- Most frequently reported linkages with educational institutions include contracts, subcontracts, financial agreements and cooperative agreements ivolving vocational/technical schools, community colleges, public/independent school districts and high schools.

- Less frequent linkages reported include GED programs, referrals and information sharing, state/regional skills centers, career and vocational exploration, use of facilities space and materials, proprietary or trade schools and labor market studies.

- Rare linkages include training of dislocated worker, training of welfare clients and handicapped, matching LEA and education funds, set asides involving Governor's or hard-to-serve funds, and three way contracts between community colleges, JTPA and the Bureau of Apprenticeship and Training (BAT).

While the above data illustrates quite varied education and training linkages, it is surprising that additional innovative arrangements were not reported. The authors note that the survey was performed by telephone and therefore was limited in terms of comprehensiveness. It is recommended that a more indepth study be performed to more closely identify various developing linkage strategies.

It is clear that both JTPA programs and educational institutions have much to gain by increasing financial resources through the joint funding of projects. In addition to the traditional icentives that encourage collaboration between education and business, a great deal of flexibility is provided by which educators can participate at various levels and offer an array of services in the state and local planning process. In addition to PIC involvement, these include:

- Representation of the State Job Training Coordinating Council (SJTCC), which advises the governor in development of a coherent policy framework based on desparate areas of employment and training, education, income security and economic development.
- Identification of needed, training related activities, including job search assistance, pre-employment training, bilingual education, remedial education and basic skill training, institutional skill training, entry-employment experience program and school-to-work transition assistance program.

In summary, JTPA offers increased opportunities to serve the economically disadvantaged and long-term unemployed, groups to which technology-oriented vocational education should be addressed. The law is unique in the innovation and creativity that it both allows and encourages.

VI. SALIENT CHARACTERISTICS OF PROGRAMS REVIEWED

Introduction

The identification of two-hundred sixty-three (263) technology-oriented programs distributed over forty (40) states would appear to be a statistically significant "universe" from which to draw a number of transferrable models and examples. A major finding of this study is that this is not the case. The literature is characterized by a prevailing vagueness and lack of specificity. For example, in most instances, only one technical oriented program was reported per educational institution. Given the great interest aroused by technology-oriented enterprises--and the very high economic and employment stakes perceived by many--it would appear that the educational institution would develop clusters of technology oriented job training programs and that efforts in several technical areas would be described in the literature. An equally striking example is provided by the data in Table VI-2, "Major Industries Represented". Thirty-nine (39) industries are simply described as "various."

Given these limitations, the following discussion of the salient characteristics of the programs reviewed necessarily takes on the form of a contour map and not a detailed guide to specific programs. A detailed guide requires an additional effort and a different methodology, as is identified in the conclusion to this study.

Total Programs Identified

The literature review resulted in the identification of two-hundred sixty-three (263) programs, represent technology-oriented job preparation activities in forty (40) states. As previously indicated, the quality of available descriptive program information varied widely. The analyses of overall program effort levels are therefore, limited to the numbers of programs per state, the numbers of educational institutions by state and the maximum number of programs per institution.

Ten (10) or more individual programs were identified in twenty-five percent (25%) of the states represented. Programs in each of these ten (10) states involved five (5) or more educational institutions. Table VI-1 identifies the total number of programs and the total number of educational institutions identified for each of these states.

TABLE VI-1

STATES WITH 10 OR MORE IDENTIFIED PROGRAMS

STATE	TOTAL PROGRAMS	TOTAL EDUCATIONAL INSTITUTIONS
Illinois	22	15
California	19	9
Pennsylvania	16	12
Texas	16	9
North Carolina	15	13
New York	13	13
South Carolina	13	10
Oregon	13	8
Michigan	12	5
Washington	11	5

That such populous states as Illinois, California, Pennsylvania, and Texas should head this listing comes as no surprise. On the other hand, the data do provide some insight into one of the significant trends clearly revealed by the literature: the extent to which southern states have aggressively pursued new industries and have done so with, among other things, vocational training programs.

This study identified only one (1) technology-oriented program for the vast majority (139 or 76%) of the one-hundred eighty-two (182) educational institutions represented. Two (2) individual programs were identified in twenty-five (25) of the remaining institutions (13.7%), three (3) individual programs were identified in seven (7) institutions (3.9%) and four (4) individual programs were identified in eight (8) institutions.

Types of Training

Numerous types of training programs were described in the literature reviewed. In an effort to identify program trends and areas of concentration, major types of training are defined as those described in five (5) or more programs. Of the thirteen (13) major types of training identified (shown in Table VI-2), electrical/electronic and computer-related programs represent the greatest levels of effort.

TABLE VI-2

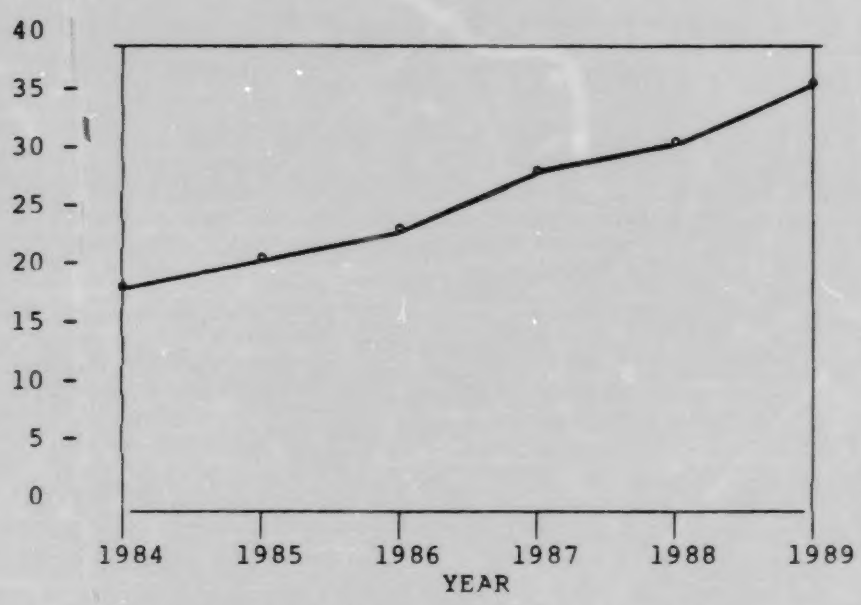
TOTAL PROGRAMS IDENTIFIED BY MAJOR TYPE OF TRAINING

MAJOR TYPE OF TRAINING	NUMBER OF PROGRAMS
Electrical/Electronics	39
Computer-related (macro, micro, mini)	36
Machine tool/operations	18
Data entry/word processing	16
Welding	15
Automotive	11
Robotics	8
Mechanics	6
Pipe fitting	6
Sheet metal	6
Fire science	5
Industrial	5
Instructor Update	5
Total Type 13	Total programs 176

The dominance of these two closely related technologies is perfectly consistent with recent economic developments, in which electronics and computers have registered explosive growth and advancement. Both the Department of Commerce and industry projections point to continuing strength. For example, U. S. computer shipments are expected to increase by seventeen percent (17%) in 1985; several major products are soon to be introduced; and the use of computers for business will continue to rise rapidly. The computer and many other electronic devices are, of course, intimately tied to semiconductors. Figure 1 shows the projected annual growth rate for the crucial semiconductor industry in the period 1984-1989.

FIGURE 1

PROJECTED ANNUAL GROWTH RATE, 1984 - 1989
3674 - Semiconductors



SOURCE: Resource Dynamics Corporation

Prime Movers

A key characteristic of each identified program includes the prime mover, actors or entities, responsible for the development and implementation of the program. As discussed in previous sections, technology-oriented job training actors are numerous and the diverse groups are described by an assortment of terms including: council, consortium, committee, association, etc.

Data collected in this survey were especially vague with respect to the composition and functions of prime movers. An initial attempt was made to identify and describe specific roles of key actors. Only thirty-eight percent (38%) of the identified programs specified involvement by various business(es) or industry(ies) as responsible for program development and implementation.

It is readily apparent that the available program descriptions do not adequately indicate the extent of private sector training involvement. We have already noted that corporations and businesses annually spend $30 billion on employee training. Polaroid Corporation offered its employees over one hundred (100) courses in 1983; Motorola spent 1.5 percent of its pay role on training; and the Xerox Corporation, whose name appears but once in Appendix C, is worldfamous for the breadth and depth of its training.

Other, more helpful descriptions of prime movers include: sixty-eight (68) specified companies; twenty-one (21) specified local councils, consortiums or committees, thirteen (13) commissions or other state organizations; eleven (11) national or major idustry groups; ten (10) business/educational institution relationships; five (5) U. S. Government Agencies; and four (4) Private Industry Councils.

Industries/Specific Groups Served

The identified two-hundred sixty-three (263) programs were reviewed to determine the major industries represented, areas of industrial operation, and specific groups served.

These data were obtained from the comments section developed to describe individual program characteristics.

As was observed in description of "prime movers", there are significant variations in specificity in industrial areas served. While almost half of the programs indicated electronics (22%) and manufacturing (20%) as major industries, descriptions of fifteen percent (15%) of the total merely indicated that "broad industrial" or "various local" industries were being served.

Table VI-3, identifies the twenty-one (21) industries represented by two or more individual programs.

TABLE VI-3

MAJOR INDUSTRIES REPRESENTED

INDUSTRY	NUMBER OF PROGRAMS
Electronics	57
Manufacturing	53
Various	39
Automotive	13
Energy	12
Utilities	12
Health	11
Aerospace/Aviation	9
Construction	9
Communications	7
Marine	5
Welding	5
Engineering	4
Military	4
Mining	4
Steel	4
Optics	3
Chemicals	2
Drafting	2
Fire Science	2
Insurance	2
Total Industries 21	Total Programs 259

Specific Groups Served

Only fifty-four (54) programs (21% of total) indicated a specific population being served. As is indicated by Table VI-4, almost half (44%) of these programs are geared toward upgrading or retraining workers, twenty-percent (20%) represent apprenticeship, and thirteen percent (13%) are geared toward disadvantaged workers.

TABLE VI-4

IDENTIFIED GROUPS SERVED BY PROGRAM

SPECIFIC GROUPS SERVED		PROGRAMS NUMBER	PROGRAMS PERCENT
Upgrading/Retraining		24	44%
Apprentices		11	20%
Disadvantaged		7	13%
Faculty Training		4	7%
Displaced Workers		3	6%
Women		2	4%
Company Employees		1	2%
Deaf Workers		1	2%
High School Students		1	2%
Total Groups	9	54	100%

Although the total number of programs that identified a specific population are extremely low, it can be expected that future program documentation will include this critical data. The literature repeatedly recommends that technology-oriented job preparation be market-oriented, practical, intensive and student centered to meet employer needs. Evolving programs, such as those promoted through JTPA, are required to establish impact measures and identify characteristics related to success.

In summary, the current literature only sporatically provides clear cut descriptions of the total training effort undertaken by individual programs. As in any program description, procedures are rarely sufficiently outlined to support longevity and promote institutionalization. The critical element that is consistently lost involves a sense of the program dynamics, which in one situation may lead to success and in an identical program result in failure. Program dynamics are especially important in developing technology-oriented programs. The development of documented technology-oriented job preparation models requires a methodology that far exceeds the limitations of the current project.

VII. CONCLUSIONS AND RECOMMENDATIONS

Restricted to a survey and analysis of the recent literature, this study set out to:

- assemble all current information on the state of technology-oriented vocational education programs;
- analyze the literature to discern the roles of the principal players, the links between programs and government bodies and private sector entities, and the character of the programs themselves; and
- provide vocational education professionals, corporations, labor unions, professional associations, government officials at all levels, students, and the general public with a portrait of the state-of-the-art as well as a detailed picture of programs which could serve as models or guides for those wishing to embark on technology-oriented training.

Very early in the study it became apparent that the literature was voluminous. It also became clear that certain aspects of the subject had been addressed in great detail. There is a rich body of prescriptive or "theoretical" literature. The literature on the changing U. S. economy and the implications of this change for training, retraining and future employment is equally abundant; including general descriptions of federal and state legislative initiatives and economic development activities. Thus the first conclusion to emerge from this study is that there are ample sources from which one can develop a portrait of the state-of-the-art.

The study's second - and more important - conclusion is that, for all its abundance, the current literature is conspicuously lacking in the kind of detail needed from which to draw replicable models. Critically important questions left unanswered by the available literature include:

- how does one measure the success or failure of a particular program?
- what do we know about the potential earnings and the career paths of students after they pass through individual programs?
- what, in specific detail, is the relationship between the cost of training and certain skill levels achieved?
- what do individual case studies tell us about the dynamics between teachers and pupils?
- how long do certain programs normally take and under what conditions can they begin--e.g., student prerequisites?

It is this lack of needed detail which leads directly to the study's principal recommendation: in order to provide all concerned with useful, replicable models on which to build successful technology-oriented vocational education programs, the Department of Education should sponsor a field study of twenty-five (25) carefully selected programs. The kind of insights and information needed to develop replicable models requires first hand experience of program dynamics. Selected programs should be of differing sizes and located throughout the country. In order to cover the spectrum of vocational education, five (5) programs in high schools, adult education, junior colleges, corporations, and private educational institutions could serve as the core of the study. One America strongly recommends that such a study be undertaken and that the end product should be not only a report to be aggressively disseminated but also a video taped package that is presented throughout the country in a variety of settings.

The training and retraining of America workers in a fast-changing economy remains an urgent and fascinating problem. The contours of the problem have been discussed again and again. What is missing--and what we now need to have--are the details of truly imaginative and successful responses to this challenge. We believe that the kind of study we recommend will address this need.

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APPENDIX A

INSTITUTION DATA, FILE A

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                                                 ST  INSTITUTION
                                                 --  ------------------------------------------------------------
State and Institution                            AL  Calhoun Community College: Decatur
Business
Business Activity Area
Institution/Business Relationship                    Customized
Type of Training

State and Institution                            AL  Calhoun Community College: Decatur
Business
Business Activity Area
Institution/Business Relationship                    Sharing resources
Type of Training

State and Institution                            AR  Phillips County Community College: Helena
Business                                             Private Industry Council
Business Activity Area
Institution/Business Relationship                    Sharing resources
Type of Training                                     Welding technology

State and Institution                            AR  Phillips County Community College; Helena
Business                                             Local Airport Commission
Business Activity Area                               Airport
Institution/Business Relationship                    Cooperative
Type of Training                                     Airframe  mechanics

State and Institution                            AR  Phillips County Community College: Helena
Business
Business Activity Area
Institution/Business Relationship
Type of Training                                     Power plant mechanics

State and Institution                            AZ  Glendale Community College: Glendale
Business                                             American Society for Quality Control
Business Activity Area                               Quality control
Institution/Business Relationship                    Sharing resources
Type of Training                                     Quality control

State and Institution                            AZ  Northland Pioneer College: Holbrook
Business                                             Power plant
Business Activity Area                               Utility
Institution/Business Relationship                    Cooperative
Type of Training                                     Power plant operator technology

State and Institution                            AZ  Northland Pioneer College; Holbrook
Business
Business Activity Area
Institution/Business Relationship                    Customized courses
Type of Training

State and Institution                            AZ  Rio Salado Community College: Phoenix
Business
Business Activity Area
Institution/Business Relationship                    Apprenticeship
Type of Training
```

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	ST	INSTITUTION
State and Institution	AZ	Rio Salado Community College; Phoenix
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		
State and Institution	CA	Computer Training Center; San Diego
Business		IBM
Business Activity Area		Electronics
Institution/Business Relationship		Cooperative
Type of Training		Computer training
State and Institution	CA	Computer Training Center; San Diego
Business		Home Federal Savings and Loan
Business Activity Area		Financial
Institution/Business Relationship		
Type of Training		
State and Institution	CA	Computer Training Center; San Diego
Business		Cooley Press
Business Activity Area		Publishing
Institution/Business Relationship		
Type of Training		
State and Institution	CA	Computer Training Center; San Diego
Business		California First Bank
Business Activity Area		Financial
Institution/Business Relationship		
Type of Training		
State and Institution	CA	Computer Training Center; San Diego
Business		Bank of America
Business Activity Area		Financial
Institution/Business Relationship		
Type of Training		
State and Institution	CA	Diablo Valley College; Pleasant Hill
Business		Lawrence Livermore National Laboratory
Business Activity Area		Electronics
Institution/Business Relationship		Cooperative
Type of Training		Computer manufacture
State and Institution	CA	El Camino College; Torrance
Business		
Business Activity Area		
Institution/Business Relationship		Sharing resources
Type of Training		Electronics
State and Institution	CA	Evergreen Valley; San Jose
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Electronics

	ST	INSTITUTION
State and Institution	CA	Los Angeles Community College district
Business		Los Angeles Business Labor Council
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Robotics
State and Institution	CA	Los Angeles Community College district
Business		Tandon Corporation
Business Activity Area		Electronics
Institution/Business Relationship		Customized courses
Type of Training		Optics (laser)
State and Institution	CA	Los Angeles Community College district
Business		Pacific Bell
Business Activity Area		utility
Institution/Business Relationship		
Type of Training		Computer assisted design
State and Institution	CA	Los Angeles Community College district
Business		Powertec
Business Activity Area		Electronics
Institution/Business Relationship		
Type of Training		Computer assisted manufacturing
State and Institution	CA	Los Angeles Community College district
Business		Litton Guidance and Control Systems
Business Activity Area		Aerospace
Institution/Business Relationship		
Type of Training		Microwave technology
State and Institution	CA	Los Angeles Community College district
Business		Bunker Ramco Electronic Systems
Business Activity Area		Aerospace
Institution/Business Relationship		
Type of Training		Computerized numerical control machinist
State and Institution	CA	Los Angeles Community College district
Business		Hughes Electron Dynamics Division
Business Activity Area		Aerospace
Institution/Business Relationship		
Type of Training		Computer assisted apparel production
State and Institution	CA	Los Angeles Community College district
Business		Hughes Space Communications Division
Business Activity Area		Aerospace
Institution/Business Relationship		
Type of Training		Electronic phone technician
State and Institution	CA	Los Angeles Community College district
Business		Hughes Missile Systems
Business Activity Area		Aerospace
Institution/Business Relationship		
Type of Training		Microwave technician

	ST	INSTITUTION
State and Institution	CA	Los Angeles Community College district
Business		Holmes and Narver
Business Activity Area		Electronics
Institution/Business Relationship		
Type of Training		Computerized production management
State and Institution	CA	Los Angeles Community College district
Business		Data Power
Business Activity Area		Electronics
Institution/Business Relationship		
Type of Training		Computer assisted drafting
State and Institution	CA	Los Angeles Community College district
Business		Eldec Electronics
Business Activity Area		Electronics
Institution/Business Relationship		
Type of Training		
State and Institution	CA	Los Angeles Community College district
Business		ITT Cannon
Business Activity Area		Electronics
Institution/Business Relationship		
Type of Training		
State and Institution	CA	Los Angeles Community College district
Business		Hughes Aircraft
Business Activity Area		Aerospace
Institution/Business Relationship		
Type of Training		
State and Institution	CA	Los Angeles Community College district
Business		Society of Manufacturing Engineers
Business Activity Area		
Institution/Business Relationship		
Type of Training		
State and Institution	CA	Orange County Colleges: Garden Grove
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Electronics
State and Institution	CA	Orange County Colleges: Garden Grove
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Aerospace
State and Institution	CA	Palomar Community College; San Marcos
Business		Hewlett-Packard Company
Business Activity Area		Electronics
Institution/Business Relationship		Cooperative
Type of Training		Electronic technician

	ST	INSTITUTION
State and Institution	CA	Palomar Community College: San Marcos
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Microelectronics technician
State and Institution	CA	Southwestern Cable TV Training Center; San Diego
Business		Southwestern Cable TV Company
Business Activity Area		Cable television
Institution/Business Relationship		Contract
Type of Training		Installation for cable television
State and Institution	CA	Unnamed High Schools
Business		Chevron
Business Activity Area		Fuels
Institution/Business Relationship		Cooperative
Type of Training		
State and Institution	CO	Colorado Mountain College; Glenwood Springs
Business		Union Oil Company
Business Activity Area		Fuels
Institution/Business Relationship		Cooperative
Type of Training		Mine maintenance
State and Institution	CO	Colorado Mountain College: Glenwood Springs
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Electricity
State and Institution	CO	Colorado Mountain College; Glenwood Springs
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Mechanics
State and Institution	CO	Colorado Mountain College: Glenwood Springs
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Welding
State and Institution	CO	Colorado Mountain College; Glenwood Springs
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Hydraulics
State and Institution	CO	Colorado Mountain College: Glenwood Springs
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Oil shale technology

	ST	INSTITUTION
State and Institution	CO	Community College of Denver, Red Rocks Campus: Golden
Business		
Business Activity Area		
Institution/Business Relationship		Sharing resources
Type of Training		Chemical operations
State and Institution	CO	Community College of Denver, Red Rocks Campus; Golden
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Machine tool operation
State and Institution	CO	Community College of Denver, Red Rocks Campus: Golden
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Word processing
State and Institution	CO	Community College of Denver, Red Rocks Campus: Golden
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Welding
State and Institution	CO	Community College of Denver, Red Rocks Campus: Golden
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Pipefitting
State and Institution	CO	Northeastern Junior College: Sterling
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		
State and Institution	CO	Pikes Peak Community College; Colorado Springs
Business		
Business Activity Area		
Institution/Business Relationship		Sharing resources
Type of Training		Electronics technician
State and Institution	CT	Manchester Community College: Manchester
Business		Pratt and Whitney Aircraft Group
Business Activity Area		Aircraft
Institution/Business Relationship		Apprenticeship
Type of Training		Electronics
State and Institution	CT	Manchester Community College: Manchester
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Sheet metal

	ST	INSTITUTION
State and Institution	CT	Manchester Community College: Manchester
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Machine operation
State and Institution	DE	Delaware Technical and Community College: Wilmington
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Engineering instructor update
State and Institution	DE	Delaware Technical and Community College: Wilmington
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Data processing instructor update
State and Institution	FL	Pensacola Junior College: Pensacola
Business		Monsanto Fibers and Instruments
Business Activity Area		Electronics/chemistry
Institution/Business Relationship		Sharing resources
Type of Training		Pipe fitting
State and Institution	FL	Pensacola Junior College: Pensacola
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Micro processing
State and Institution	FL	Pensacola Junior College; Pensacola
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Schematic wiring
State and Institution	FL	Pensacola Junior College; Pensacola
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Instrumentation electronics
State and Institution	FL	Pensacola Junior College; Pensacola
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Diagramming/management
State and Institution	FL	Santa Fe Community College: Gainsville
Business		A national insurance company
Business Activity Area		Insurance
Institution/Business Relationship		Cooperative
Type of Training		Auto insurance

	ST	INSTITUTION
State and Institution	FL	Santa Fe Community College: Gainsville
Business		A major electronics industry
Business Activity Area		Electronics
Institution/Business Relationship		Sharing resources
Type of Training		Fire insurance
State and Institution	FL	Santa Fe Community College: Gainsville
Business		A major utilities department
Business Activity Area		utility
Institution/Business Relationship		
Type of Training		Electronic technology
State and Institution	FL	Santa Fe Community College: Gainsville
Business		Alachua County Private Industry Council
Business Activity Area		Telephone
Institution/Business Relationship		
Type of Training		Ground and line work for women and minorities
State and Institution	FL	Santa Fe Community College: Gainsville
Business		
Business Activity Area		Cable television
Institution/Business Relationship		
Type of Training		Small motor repair for women and minorities
State and Institution	FL	Santa Fe Community College: Gainsville
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Video game and vending machine repair for women and minorities
State and Institution	FL	Santa Fe Community College; Gainsville
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Fire extinguisher maintenance for women and minorities
State and Institution	GA	Bainbridge Junior College; Bainbridge
Business		
Business Activity Area		
Institution/Business Relationship		Apprenticeship
Type of Training		Electrical maintenance apprenticeship
State and Institution	GA	Bainbridge Junior College; Bainbridge
Business		
Business Activity Area		
Institution/Business Relationship		Sharing resources
Type of Training		Mechanical maintenance apprenticeship
State and Institution	GA	Dalton Junior College; Dalton
Business		A digital equipment company
Business Activity Area		Electronics
Institution/Business Relationship		Cooperative
Type of Training		Minicomputer technician

	ST	INSTITUTION
State and Institution	ID	Idaho State University; Pocatello
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Electronics
State and Institution	IL	Black Hawk College East Campus; Kewanee
Business		
Business Activity Area		
Institution/Business Relationship		Sharing resources
Type of Training		Computer science
State and Institution	IL	City Colleges of Chicago, Chicago City-wide College
Business		
Business Activity Area		
Institution/Business Relationship		Sharing resources
Type of Training		Data processing
State and Institution	IL	City Colleges of Chicago, Chicago City-wide College
Business		Medical centers and hospitals
Business Activity Area		Health care
Institution/Business Relationship		Cooperative
Type of Training		Occupational therapy assistant
State and Institution	IL	City Colleges of Chicago, Chicago City-wide College
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Radiation therapy technology
State and Institution	IL	City Colleges of Chicago, Chicago City-wide College
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Paramedic
State and Institution	IL	College of DuPage; Glen Ellyn
Business		
Business Activity Area		
Institution/Business Relationship		Contract
Type of Training		Electronics
State and Institution	IL	College of DuPage; Glen Ellyn
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Manufacturing technology
State and Institution	IL	College of DuPage; Glen Ellyn
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Technical writing

	ST	INSTITUTION
State and Institution	GA	Dalton Junior College; Dalton
Business		
Business Activity Area		
Institution/Business Relationship		[illegible]aring resources
Type of Training		
State and Institution	GA	The State of Georgia
Business		
Business Activity Area		
Institution/Business Relationship		Contract
Type of Training		
State and Institution	IA	Community College, Drake Univ., National Institute of Technology
Business		
Business Activity Area		
Institution/Business Relationship		Customized
Type of Training		
State and Institution	IA	Indian Hills Community College; Ottumwa
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Sheetmetal
State and Institution	IA	Indian Hills Community College; Ottumwa
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Machine operator
State and Institution	IA	Indian Hills Community College; Ottumwa
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Welding
State and Institution	ID	Idaho State University; Pocatello
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Drafting internship
State and Institution	ID	Idaho State University; Pocatello
Business		
Business Activity Area		
Institution/Business Relationship		Sharing resources
Type of Training		Welding
State and Institution	ID	Idaho State University; Pocatello
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Blueprint reading

	ST	INSTITUTION
State and Institution	IL	College of DuPage; Glen Ellyn
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Data processing
State and Institution	IL	College of DuPage; Glen Ellyn
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Communications
State and Institution	IL	College of DuPage; Glen Ellyn
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Nursing assistant
State and Institution	IL	College of DuPage; Glen Ellyn
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Air conditioning technology
State and Institution	IL	College of DuPage; Glen Ellyn
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Basic die theory
State and Institution	IL	College of DuPage; Glen Ellyn
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Plastic technology
State and Institution	IL	College of Lake County; Grayslake
Business		County Industrial Opportunity Committee
Business Activity Area		
Institution/Business Relationship		Apprenticeship
Type of Training		Skilled craft apprenticeship
State and Institution	IL	College of Lake County; Grayslake
Business		U. S. Department of Defense
Business Activity Area		Military
Institution/Business Relationship		Sharing resources
Type of Training		Manufacturing technology
State and Institution	IL	College of Lake County; Grayslake
Business		General Motors
Business Activity Area		Automotive
Institution/Business Relationship		Cooperative
Type of Training		Robotics

	ST	INSTITUTION
State and Institution	IL	College of Lake County; Grayslake
Business		Caterpillar Tractor Company
Business Activity Area		Manufacturing
Institution/Business Relationship		
Type of Training		
State and Institution	IL	Elgin Community College; Elgin
Business		Indal Tool Corporation
Business Activity Area		Manufacturing
Institution/Business Relationship		Cooperative
Type of Training		Computer design
State and Institution	IL	Illinois Central College
Business		Keystone Steel and Wire
Business Activity Area		Manufacturing
Institution/Business Relationship		Cooperative
Type of Training		
State and Institution	IL	John Wood Community College; Quincy
Business		
Business Activity Area		
Institution/Business Relationship		Contract
Type of Training		
State and Institution	IL	Joliet Community College and seven area High Schools
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Computer aided design
State and Institution	IL	Kankakee Community College; Kankakee
Business		Local hospitals
Business Activity Area		Health services
Institution/Business Relationship		Cooperative
Type of Training		Radiologic technology
State and Institution	IL	Moraine Valley Community College; Palos Hills
Business		National Cable TV Institute
Business Activity Area		Cable television
Institution/Business Relationship		Cooperative
Type of Training		Cable TV installation and maintenance
State and Institution	IL	Moraine Valley Community College; Palos Hills
Business		
Business Activity Area		
Institution/Business Relationship		Apprenticeship
Type of Training		
State and Institution	IL	Prairie State College; Chicago Heights
Business		
Business Activity Area		
Institution/Business Relationship		Contract
Type of Training		

	ST	INSTITUTION
State and Institution	IL	Rend Lake College; Ina
Business		Inland Steel Company
Business Activity Area		Steel
Institution/Business Relationship		Cooperative
Type of Training		Mining technology
State and Institution	IL	Rend Lake College; Ina
Business		Old Ben Coal Company
Business Activity Area		Mining
Institution/Business Relationship		
Type of Training		
State and Institution	IL	Technical Assistance Training Corporation; Chicago
Business		Private Industry Council
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Word processing
State and Institution	IL	Triton College; River Grove
Business		Control Data Corporation
Business Activity Area		Electronics
Institution/Business Relationship		Cooperative
Type of Training		Software design engineering
State and Institution	IL	Triton College; River Grove
Business		General Motors
Business Activity Area		Automotive
Institution/Business Relationship		Sharing resources
Type of Training		Robotics
State and Institution	IL	Triton College; River Grove
Business		National Society for Die Casting Engineers
Business Activity Area		Manufacturing
Institution/Business Relationship		Customized
Type of Training		Computer aided manufacturing
State and Institution	IL	Triton College; River Grove
Business		
Business Activity Area		
Institution/Business Relationship		Apprenticeship
Type of Training		Automotive mechanic apprentice
State and Institution	IN	Indiana Vocational Technical College; Gary
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Motor inspection apprentice
State and Institution	IN	Indiana Vocational Technical College; Gary
Business		
Business Activity Area		
Institution/Business Relationship		Sharing resources
Type of Training		Millwright

	ST	INSTITUTION
State and Institution	IN	Indiana Vocational Technical College; Gary
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Welding apprentice
State and Institution	LA	Delagado Community College; New Orleans
Business		A telephone system
Business Activity Area		Utility
Institution/Business Relationship		Cooperative
Type of Training		Electronics
State and Institution	LA	Delagado Community College; New Orleans
Business		
Business Activity Area		
Institution/Business Relationship		Sharing resources
Type of Training		Electricity
State and Institution	LA	Delagado Community College; New Orleans
Business		
Business Activity Area		
Institution/Business Relationship		Apprenticeship
Type of Training		
State and Institution	LA	Delagado Community College; New Orleans
Business		A local hospital
Business Activity Area		Health
Institution/Business Relationship		
Type of Training		Emergency medical technician
State and Institution	LA	Delagado Community College; New Orleans
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		X-Ray technology
State and Institution	LA	Delagado Community College; New Orleans
Business		
Business Activity Area		Fuels
Institution/Business Relationship		
Type of Training		Petroleum industry technician
State and Institution	LA	Delagado Community College; New Orleans
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Natural gas industry technician
State and Institution	MA	Bunker Hill Community College; Boston
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Electronic technician

	ST	INSTITUTION
State and Institution	MA	Bunker Hill Community College; Boston
Business		
Business Activity Area		
Institution/Business Relationship		Sharing resources
Type of Training		
State and Institution	MA	Franklin Institute; Boston
Business		Tufts-New England Medical Center
Business Activity Area		Health
Institution/Business Relationship		Customized
Type of Training		Medical technology
State and Institution	MA	Franklin Institute; Boston
Business		Digital Equipment Corporation
Business Activity Area		Electronics
Institution/Business Relationship		Contract
Type of Training		Minicomputer technology
State and Institution	MA	Greater Lowell Regional Vocational Technical School; Lowell
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		
State and Institution	MA	North Shore Community College; Beverly
Business		GTE Sylvania, Inc.
Business Activity Area		Electronics
Institution/Business Relationship		Cooperative
Type of Training		Computer science
State and Institution	MA	North Shore Community College; Beverly
Business		International Union of Electrical Workers/N.E. District Council
Business Activity Area		Union
Institution/Business Relationship		Contract
Type of Training		Electromechanical technology
State and Institution	MA	North Shore Community College; Beverly
Business		Salem Hospital
Business Activity Area		Health
Institution/Business Relationship		
Type of Training		Occupational therapy assistant
State and Institution	MA	North Shore Community College; Beverly
Business		Turningpoint, Inc.
Business Activity Area		
Institution/Business Relationship		
Type of Training		Mental health
State and Institution	MA	North Shore Community College; Beverly
Business		Varian-Beverly Division
Business Activity Area		
Institution/Business Relationship		
Type of Training		Machinist

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                                           ST  INSTITUTION
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State and Institution                      MA  North Shore Community College; Beverly
Business                                       General Electric
Business Activity Area                         Manufacturing
Institution/Business Relationship
Type of Training

State and Institution                      MA  Regis College of Weston; Weston
Business                                       Honeywell Information Systems
Business Activity Area                         Electronics
Institution/Business Relationship              Cooperative
Type of Training                               Computer programming

State and Institution                      MD  Dundalk Community College; Baltimore
Business                                       Bethlehem Steel
Business Activity Area                         Steel
Institution/Business Relationship              Customized courses
Type of Training                               Electric maintenance

State and Institution                      MD  Dundalk Community College; Baltimore
Business
Business Activity Area
Institution/Business Relationship              Cooperative
Type of Training                               Electronics

State and Institution                      MD  Dundalk Community College; Baltimore
Business
Business Activity Area
Institution/Business Relationship
Type of Training                               Computer technology

State and Institution                      MD  Essex Community College; Baltimore
Business
Business Activity Area
Institution/Business Relationship              Cooperative
Type of Training                               Electronics

State and Institution                      MD  Essex Community College; Baltimore
Business
Business Activity Area
Institution/Business Relationship
Type of Training                               Computer technology

State and Institution                      MD  Hagerstown Junior College; Hagerstown
Business
Business Activity Area
Institution/Business Relationship              Customized courses
Type of Training                               Instructor update

State and Institution                      MD  Prince Georges Community College
Business                                       Digital Equipment Corporation
Business Activity Area                         Electronics
Institution/Business Relationship              Contract
Type of Training                               Micro-computer technician
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	ST	INSTITUTION
State and Institution	ME	Training Resource Center; Cumberland County
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Welding
State and Institution	ME	Training Resource Center; Cumberland County
Business		
Business Activity Area		
Institution/Business Relationship		Customized courses
Type of Training		Computer science
State and Institution	ME	University of Maine at Augusta
Business		
Business Activity Area		
Institution/Business Relationship		Contract
Type of Training		
State and Institution	MI	Alpena Community College; Alpena
Business		Besser Company
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Concrete/masonry technology
State and Institution	MI	Bay de Noc Community College; Escanaba
Business		
Business Activity Area		
Institution/Business Relationship		Contract
Type of Training		
State and Institution	MI	Kalamazoo Valley Community College; Kalamazoo
Business		
Business Activity Area		
Institution/Business Relationship		Apprenticeship
Type of Training		Tool and die apprentice
State and Institution	MI	Kalamazoo Valley Community College; Kalamazoo
Business		
Business Activity Area		
Institution/Business Relationship		Contract
Type of Training		Millwright apprentice
State and Institution	MI	Kalamazoo Valley Community College; Kalamazoo
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Pipefitter apprentice
State and Institution	MI	Kalamazoo Valley Community College; Kalamazoo
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Machinist apprentice

	ST	INSTITUTION
State and Institution	MI	Kalamazoo Valley Community College; Kalamazoo
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Mechanic
State and Institution	MI	Kalamazoo Valley Community College; Kalamazoo
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Electrician apprentice
State and Institution	MI	Kalamazoo Valley Community College; Kalamazoo
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Machine repair
State and Institution	MI	Kalamazoo Valley Community College; Kalamazoo
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Powerhouse mechanic
State and Institution	MI	Kalamazoo Valley Community College; Kalamazoo
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Tool and die moldmaker apprentice
State and Institution	MI	MaComb Community College; Warren
Business		Ford Motor Company
Business Activity Area		Automotive
Institution/Business Relationship		Customized courses
Type of Training		Robotics
State and Institution	MI	MaComb Community College; Warren
Business		United Auto Workers
Business Activity Area		Union
Institution/Business Relationship		Cooperative
Type of Training		Automotive service technician
State and Institution	MI	MaComb Community College; Warren
Business		Volkswagen
Business Activity Area		Automotive
Institution/Business Relationship		
Type of Training		
State and Institution	MI	MaComb Community College; Warren
Business		General Dynamics
Business Activity Area		Electronics
Institution/Business Relationship		
Type of Training		

	ST	INSTITUTION
State and Institution	MI	Macomb Community College; Warren
Business		General Motors
Business Activity Area		Automotive
Institution/Business Relationship		
Type of Training		
State and Institution	MI	Oakland Community College; Auburn Heights
Business		Solar energy companies
Business Activity Area		Energy
Institution/Business Relationship		Cooperative
Type of Training		Energy management
State and Institution	MI	Oakland Community College; Auburn Heights
Business		General Motors
Business Activity Area		Automotive
Institution/Business Relationship		
Type of Training		Robotics
State and Institution	MI	Oakland Community College; Auburn Heights
Business		U. S. Army Reserve School
Business Activity Area		Military
Institution/Business Relationship		
Type of Training		Electrical technology
State and Institution	MI	Oakland Community College; Auburn Heights
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Climate control technology
State and Institution	MI	Oakland Community College; Auburn Heights
Business		American Automobile Association
Business Activity Area		
Institution/Business Relationship		
Type of Training		Automotive claims insurance adjuster
State and Institution	MO	Jefferson City local schools; Jefferson City
Business		General Motors
Business Activity Area		Automotive
Institution/Business Relationship		Cooperative
Type of Training		Automation technology
State and Institution	MO	Jefferson College; Hillsboro
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Welding
State and Institution	MO	Jefferson College; Hillsboro
Business		
Business Activity Area		
Institution/Business Relationship		Sharing resources
Type of Training		Sheet metal fabrication

	ST	INSTITUTION
State and Institution	MO	Northeast Missouri State University; Kirksville
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		
State and Institution	MO	Northeast Missouri State University; Kirksville
Business		
Business Activity Area		
Institution/Business Relationship		Sharing resources
Type of Training		
State and Institution	MO	St. Louis Community College; St. Louis
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		
State and Institution	MO	State Fair Community College; Sedalia
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		
State and Institution	MS	Itawamba Junior College; Tupelo
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		
State and Institution	MT	Miles Community College; Miles City
Business		Montana Power Company
Business Activity Area		Utility
Institution/Business Relationship		Cooperative
Type of Training		Electrician
State and Institution	MT	Miles Community College; Miles City
Business		
Business Activity Area		
Institution/Business Relationship		Sharing resources
Type of Training		Instrumentation
State and Institution	MT	Miles Community College; Miles City
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Mechanics
State and Institution	NC	Asheville-Buncombe Technical College; Asheville
Business		
Business Activity Area		
Institution/Business Relationship		Sharing resources
Type of Training		

	ST	INSTITUTION
State and Institution	NC	Caldwell Community Technical Institute; Hudson
Business		A new manufacturing plant
Business Activity Area		Manufacturing
Institution/Business Relationship		Cooperative
Type of Training		Blueprint reading
State and Institution	NC	Caldwell Community Technical Institute; Hudson
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Toolroom management
State and Institution	NC	Cape Fear Technical Institute; Wilmington
Business		
Business Activity Area		Marine
Institution/Business Relationship		Sharing resources
Type of Training		
State and Institution	NC	Central Carolina Technical College; Sanford
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Machine operator
State and Institution	NC	Central Piedmont Community College; Charlotte
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Instructor update
State and Institution	NC	Durham Technical Institute; Durham
Business		Dynamit
Business Activity Area		Silicon wafer manufacture
Institution/Business Relationship		Cooperative
Type of Training		Electronics
State and Institution	NC	Durham Technical Institute; Durham
Business		Philip Morris
Business Activity Area		
Institution/Business Relationship		Apprenticeship
Type of Training		Automotive maintenance
State and Institution	NC	Durham Technical Institute; Durham
Business		GE Microelectronics Facility
Business Activity Area		Electronics
Institution/Business Relationship		Sharing resources
Type of Training		Electrical technician
State and Institution	NC	Durham Technical Institute; Durham
Business		Northern Telecom
Business Activity Area		
Institution/Business Relationship		Contract
Type of Training		Machinist

	ST	INSTITUTION
State and Institution	NC	Durham Technical Institute; Durham
Business		IBM
Business Activity Area		Electronics
Institution/Business Relationship		
Type of Training		Maintenance mechanic
State and Institution	NC	Durham Technical Institute; Durham
Business		Sperry
Business Activity Area		
Institution/Business Relationship		
Type of Training		Sheet metal
State and Institution	NC	Durham Technical Institute; Durham
Business		Data General
Business Activity Area		Electronics
Institution/Business Relationship		
Type of Training		
State and Institution	NC	Durham Technical Institute; Durham
Business		Amphenol
Business Activity Area		
Institution/Business Relationship		
Type of Training		
State and Institution	NC	Durham Technical Institute; Durham
Business		Troxler Electronics
Business Activity Area		Electronics
Institution/Business Relationship		
Type of Training		
State and Institution	NC	Forsythe Technical Institute; Winston-Salem
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		
State and Institution	NC	Mayland Technical College; Spruce Pine
Business		Tennessee Valley Authority
Business Activity Area		Utility
Institution/Business Relationship		Cooperative
Type of Training		Solar water heating
State and Institution	NC	Pitt Community College; Greenville
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Instructor update
State and Institution	NC	Robeson Technical College; Lumberton
Business		Acme Electric Corporation
Business Activity Area		Electrical
Institution/Business Relationship		Cooperative
Type of Training		Maintenance

	ST	INSTITUTION
State and Institution	NC	Rowan Technical College; Salisbury
Business		Philip Morris USA
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Maintenance technician
State and Institution	NC	Wake Technical College; Raleigh
Business		
Business Activity Area		
Institution/Business Relationship		Sharing resources
Type of Training		
State and Institution	ND	Bismarck Junior College; Bismarck
Business		Great Plains coal gasification plant
Business Activity Area		Utility
Institution/Business Relationship		Cooperative
Type of Training		Energy process operator
State and Institution	ND	North Dakota School of Science; Wahpeton
Business		A telephone industry
Business Activity Area		Utility
Institution/Business Relationship		Contract
Type of Training		Telecommunications
State and Institution	ND	North Dakota School of Science; Wahpeton
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Auto mechanics
State and Institution	ND	North Dakota School of Science; Wahpeton
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Building operation and maintenance
State and Institution	ND	North Dakota School of Science; Wahpeton
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Carpenter helper
State and Institution	ND	North Dakota School of Science; Wahpeton
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Diesel mechanics
State and Institution	ND	North Dakota School of Science; Wahpeton
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Welding

	ST	INSTITUTION
State and Institution	ND	North Dakota School of Science; Wahpeton
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Weatherization technician
State and Institution	NJ	Bergen County Vocational Technical School; Hackensack
Business		Pitney Bowes
Business Activity Area		
Institution/Business Relationship		Cooperative for women
Type of Training		Electricity
State and Institution	NJ	Bergen County Vocational Technical School; Hackensack
Business		Otis Elevator
Business Activity Area		
Institution/Business Relationship		
Type of Training		Electronics
State and Institution	NJ	Bergen County Vocational Technical School; Hackensack
Business		Hewlett Packard
Business Activity Area		
Institution/Business Relationship		
Type of Training		Machine Mechanics
State and Institution	NJ	Bergen County Vocational Technical School; Hackensack
Business		IBM
Business Activity Area		Electonics
Institution/Business Relationship		
Type of Training		Vocational math
State and Institution	NJ	Bergen County Vocational Technical School; Hackensack
Business		United New Jersey Bank
Business Activity Area		Banking
Institution/Business Relationship		
Type of Training		
State and Institution	NJ	Bergen County Vocational Technical School; Hackensack
Business		New Jersey Bell
Business Activity Area		Utility
Institution/Business Relationship		
Type of Training		
State and Institution	NJ	Bergen County Vocational Technical School; Hackensack
Business		Public Service Electric and Gas Company
Business Activity Area		Utility
Institution/Business Relationship		
Type of Training		
State and Institution	NJ	Burlington County College; Pemberton
Business		
Business Activity Area		
Institution/Business Relationship		Customized courses
Type of Training		Marine architecture

	ST	INSTITUTION
State and Institution	NJ	Burlington County College; Pemberton
Business		
Business Activity Area		
Institution/Business Relationship		Sharing resources
Type of Training		Piping systems for ships
State and Institution	NJ	Cumberland County College; Vineland
Business		
Business Activity Area		
Institution/Business Relationship		Customized courses
Type of Training		Machine shop practices
State and Institution	NJ	Cumberland County College; Vineland
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Engine lathe operation
State and Institution	NJ	Mercer County Community College; Trenton
Business		
Business Activity Area		
Institution/Business Relationship		Contract
Type of Training		Communications
State and Institution	NJ	Mercer County Community College; Trenton
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Technical programs
State and Institution	NJ	Mercer County Community College; Trenton
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Management
State and Institution	NJ	Passaic County Community College; Patterson
Business		Private Industry Council
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Machine tool technology
State and Institution	NJ	RCA Training and Placement Services, Monmouth County
Business		RCA
Business Activity Area		
Institution/Business Relationship		Contract
Type of Training		Copy machine repair
State and Institution	NJ	RCA Training and Placement Services, Monmouth County
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Auto body and mechanics

	ST	INSTITUTION
State and Institution	NJ	RCA Training and Placement Services, Monmouth County
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Telephone installation and interconnect
State and Institution	NJ	RCA Training and Placement Services, Monmouth County
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Data entry
State and Institution	NM	Eastern New Mexico University, Roswell Campus
Business		Local health centers
Business Activity Area		Health
Institution/Business Relationship		Sharing resources
Type of Training		Clinical instruction for nursing students
State and Institution	NM	Eastern New Mexico University, Roswell Campus
Business		
Business Activity Area		Petroleum
Institution/Business Relationship		
Type of Training		Technician in petroleum production
State and Institution	NM	New Mexico State University, Alamogordo
Business		
Business Activity Area		Manufacturing
Institution/Business Relationship		Sharing resources
Type of Training		Machine tool technology
State and Institution	NM	New Mexico State University, Alamogordo
Business		
Business Activity Area		Military
Institution/Business Relationship		
Type of Training		
State and Institution	NM	San Juan College; Farmington
Business		Fire departments/districts
Business Activity Area		Fire service
Institution/Business Relationship		Sharing resources
Type of Training		Fire science
State and Institution	NM	University of New Mexico, Los Alamos
Business		Los Alamos Scientific Laboratories
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Instrumentation engineering
State and Institution	NM	University of New Mexico, Los Alamos
Business		
Business Activity Area		
Institution/Business Relationship		Sharing resources
Type of Training		Laser technology

	ST	INSTITUTION
State and Institution	NY	Affirmative Action Programs
Business		IBM
Business Activity Area		Electronics
Institution/Business Relationship		Cooperative
Type of Training		Word processing
State and Institution	NY	Affirmative Action Programs
Business		
Business Activity Area		
Institution/Business Relationship		Customized courses
Type of Training		Data entry
State and Institution	NY	Affirmative Action Programs
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Computer operations
State and Institution	NY	Affirmative Action Programs
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Typing and office practice
State and Institution	NY	Affirmative Action Programs
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Math
State and Institution	NY	Affirmative Action Programs
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Computer programming
State and Institution	NY	All-Craft Center; New York City
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Electrical, pre-apprenticeship for women
State and Institution	NY	All-Craft Center; New York City
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Masonry, pre-apprenticeship for women
State and Institution	NY	All-Craft Center; New York City
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Painting, pre-apprenticeship for women

	ST	INSTITUTION
State and Institution	NY	All-Craft Center; New York City
Business		
Business Activity Area		
Institution/Business Relationship		Customized courses
Type of Training		Carpentry, pre-apprenticeship for women
State and Institution	NY	All-Craft Center; New York City
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Plumbing, pre-apprenticeship for women
State and Institution	NY	All-Craft Center; New York City
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Cabinetmaking, pre-apprenticeship for women
State and Institution	NY	Career Training Center; New York City
Business		ITT
Business Activity Area		Utility
Institution/Business Relationship		Contract
Type of Training		Telecommunications
State and Institution	NY	Career Training Center; New York City
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Microcomputer repair
State and Institution	NY	Career Training Center; New York City
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Electronics
State and Institution	NY	Career Training Center; New York City
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Word processing
State and Institution	NY	Duchess Community College; Poughkeepsie
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		
State and Institution	NY	Duchess Community College; Poughkeepsie
Business		
Business Activity Area		
Institution/Business Relationship		Sharing resources
Type of Training		

	ST	INSTITUTION
State and Institution	NY	Hudson Valley Community College; Troy
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Communications
State and Institution	NY	Hudson Valley Community College; Troy
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Data processing
State and Institution	NY	Hudson Valley Community College: Troy
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Math
State and Institution	NY	Hudson Valley Community College; Troy
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Secretarial skills
State and Institution	NY	Hudson Valley Community College: Troy
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Management
State and Institution	NY	Manhattan Center for Science and Mathematics
Business		Manhattan Center Advisory Council
Business Activity Area		
Institution/Business Relationship		
Type of Training		Technology-oriented high school education
State and Institution	NY	Monroe Community College: Rochester
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Optics
State and Institution	NY	Nassau County schools
Business		Quality Business Systems, Inc.
Business Activity Area		
Institution/Business Relationship		Customized courses
Type of Training		Copier machine technician
State and Institution	NY	Nassau County schools
Business		Metropolitan Calculator Systems, Inc.
Business Activity Area		
Institution/Business Relationship		Contract
Type of Training		

	ST	INSTITUTION
State and Institution	NY	Nassau County schools
Business		Savin Corporation
Business Activity Area		
Institution/Business Relationship		
Type of Training		
State and Institution	NY	Nassau County schools
Business		A. Copy America
Business Activity Area		Photocopy
Institution/Business Relationship		
Type of Training		
State and Institution	NY	Nassau County schools
Business		RTR Business Products, Inc.
Business Activity Area		
Institution/Business Relationship		
Type of Training		
State and Institution	NY	Nassau County schools
Business		J. P. Egan Company
Business Activity Area		
Institution/Business Relationship		
Type of Training		
State and Institution	NY	Nassau County schools
Business		Garsmith Office Equipment, Inc.
Business Activity Area		
Institution/Business Relationship		
Type of Training		
State and Institution	NY	Nassau County schools
Business		Regal Office Systems, Inc.
Business Activity Area		
Institution/Business Relationship		
Type of Training		
State and Institution	NY	Nassau County schools
Business		Northeastern Office Equipment Company
Business Activity Area		
Institution/Business Relationship		
Type of Training		
State and Institution	NY	Nassau County schools
Business		Gestetner Corporation
Business Activity Area		
Institution/Business Relationship		
Type of Training		
State and Institution	NY	Nassau County schools
Business		Minolta Business Systems
Business Activity Area		
Institution/Business Relationship		
Type of Training		

	ST	INSTITUTION
State and Institution	NY	Nassau County schools
Business		Allegheny Copy Products, Inc.
Business Activity Area		Photocopy
Institution/Business Relationship		
Type of Training		
State and Institution	NY	Niagara County Community College; Niagara Falls
Business		Bell Aerospace Textron
Business Activity Area		Aerospace
Institution/Business Relationship		Sharing resources
Type of Training		Computer aided design and manufacturing
State and Institution	NY	Onandaga Community College; Syracuse
Business		
Business Activity Area		
Institution/Business Relationship		Sharing resources
Type of Training		Electrical technology
State and Institution	NY	Onandaga Community College; Syracuse
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Chemical technology
State and Institution	NY	Onandaga Community College; Syracuse
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Graphic arts/Advertising technology
State and Institution	NY	Onandaga Community College; Syracuse
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Journalism
State and Institution	NY	Orange County Community College; Middleton
Business		Ford Motor Company
Business Activity Area		Automotive
Institution/Business Relationship		Cooperative
Type of Training		
State and Institution	NY	Suffolk Community College; Selden
Business		Regional Industrial-Technical Education Council
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Vocational-technical
State and Institution	NY	Westchester County schools
Business		Arch Photocopy
Business Activity Area		Photocopy
Institution/Business Relationship		Cooperative
Type of Training		Electronics

	ST	INSTITUTION
State and Institution	NY	Westchester County schools
Business		IBM
Business Activity Area		Electronics
Institution/Business Relationship		
Type of Training		Solid state circuitry
State and Institution	NY	Westchester County schools
Business		Xerox
Business Activity Area		Photocopy
Institution/Business Relationship		
Type of Training		
State and Institution	NY	Westchester County schools
Business		Savin Corporation
Business Activity Area		
Institution/Business Relationship		
Type of Training		
State and Institution	OH	Cincinnati Technical College; Cincinnati
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Optics
State and Institution	OH	Cincinnati Technical College; Cincinnati
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Laser technology
State and Institution	OH	Cuyahoga Community College; Cleveland
Business		Numerical Controlled Machining
Business Activity Area		Robotics
Institution/Business Relationship		Sharing resources
Type of Training		Machine tool
State and Institution	OH	Cuyahoga Community College; Cleveland
Business		International Association of Machinists
Business Activity Area		Union
Institution/Business Relationship		Cooperative
Type of Training		Basic machining
State and Institution	OH	Cuyahoga Community College; Cleveland
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Television delivery systems
State and Institution	OH	Cuyahoga Community College; Cleveland
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Computer delivery systems

	ST	INSTITUTION
State and Institution	OH	Lorain County Community College; Elyria
Business		U. S. Steel Company, Lorain-Cuyahoga Works
Business Activity Area		Steel
Institution/Business Relationship		Apprenticeship
Type of Training		Electrical
State and Institution	OH	Lorain County Community College; Elyria
Business		Cleveland Electrical Company
Business Activity Area		Utility
Institution/Business Relationship		Cooperative
Type of Training		Machinist
State and Institution	OH	Lorain County Community College; Elyria
Business		
Business Activity Area		
Institution/Business Relationship		Customized courses
Type of Training		Millwright
State and Institution	OH	Lorain County Community College; Elyria
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Mobile equipment repair
State and Institution	OH	Lorain County Community College; Elyria
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Refractory masonry
State and Institution	OH	Muskingum Area Technical College; Zanesville
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Industrial engineer management
State and Institution	OH	Ohio State University at Columbus
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		
State and Institution	OH	Ohio State University at Mansfield
Business		Mansfield Area Growth Committee
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		
State and Institution	OK	South Oklahoma City Junior College; Oklahoma City
Business		Star Manufacturing Company
Business Activity Area		
Institution/Business Relationship		Customized
Type of Training		

	ST	INSTITUTION
State and Institution	OK	South Oklahoma City Junior College: Oklahoma City
Business		Western Electric
Business Activity Area		
Institution/Business Relationship		
Type of Training		
State and Institution	OR	Central Oregon Community College; Bend
Business		
Business Activity Area		
Institution/Business Relationship		Sharing resources
Type of Training		Office machine repair technology
State and Institution	OR	Central Oregon Community College; Bend
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Industrial mechanics
State and Institution	OR	Chemeketa Junior College: Salem
Business		Mid-Willamette Valley Consortium
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Industrial skills
State and Institution	OR	Chemeketa Junior College; Salem
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Mobile home construction
State and Institution	OR	Chemeketa Junior College: Salem
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Word processing
State and Institution	OR	Chemeketa Junior College; Salem
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Electronics
State and Institution	OR	Chemeketa Junior College: Salem
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Computer operations
State and Institution	OR	Chemeketa Junior College; Salem
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Microprocessor repair

	ST	INSTITUTION
State and Institution	OR	Chemeketa Junior College; Salem
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Computer assisted drafting/graphics
State and Institution	OR	Clatsop Community College; Astoria
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Marine equipment technology
State and Institution	OR	Lane Community College; Eugene
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		
State and Institution	OR	Linn-Benton Community College; Albany
Business		
Business Activity Area		
Institution/Business Relationship		Sharing resources
Type of Training		Electronic fabrication
State and Institution	OR	Portland Community College; Portland
Business		Intel Corporation
Business Activity Area		Computer chip manufacturing
Institution/Business Relationship		Cooperative
Type of Training		Electronics
State and Institution	OR	Portland Community College; Portland
Business		
Business Activity Area		
Institution/Business Relationship		Customized courses
Type of Training		Welding
State and Institution	OR	Portland Community College; Portland
Business		
Business Activity Area		
Institution/Business Relationship		Contract
Type of Training		Plumbing codes
State and Institution	OR	Portland Community College; Portland
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Blueprint reading
State and Institution	OR	Portland Community College; Portland
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Power distribution

	ST	INSTITUTION
State and Institution	OR	Portland Community College; Portland
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Technical writing
State and Institution	OR	Rogue Community College; Grants Pass
Business		U. S. Bancorp
Business Activity Area		Financial
Institution/Business Relationship		Cooperative
Type of Training		Data processing
State and Institution	OR	Rogue Community College; Grants Pass
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Precision machining
State and Institution	OR	Rogue Community College; Grants Pass
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Word processing
State and Institution	OR	Rogue Community College; Grants Pass
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Bookkeeping
State and Institution	OR	Southwestern Oregon Community College; Coos Bay
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		
State and Institution	PA	Allentown, PA Business Council
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		
State and Institution	PA	Bethlehem Area Vocational Technical School; Northampton County
Business		Rexroth Corporation
Business Activity Area		Manufacturing
Institution/Business Relationship		Cooperative
Type of Training		Industrial hydraulics
State and Institution	PA	Community College of Allegheny County; Pittsburgh
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Robotics repair

	ST	INSTITUTION
State and Institution	PA	Control Data Institute; Pittsburgh
Business		Control Data Corporation
Business Activity Area		Electronics
Institution/Business Relationship		
Type of Training		
State and Institution	PA	Elliott Training Center; Greensburg
Business		Elliott Company, division of United Technologies
Business Activity Area		Electronics
Institution/Business Relationship		
Type of Training		Robotics
State and Institution	PA	Elliott Training Center; New Stanton
Business		Volkswagen
Business Activity Area		Automotive
Institution/Business Relationship		
Type of Training		Computer aided design
State and Institution	PA	Four advanced technical centers
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		
State and Institution	PA	Northampton County Area Community College
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Components and systems maintenance of hydraulic systems
State and Institution	PA	Philadelphia High School Academies
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Job skills
State and Institution	PA	SUN Area Vocational-Technical School; New Brunswick
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Computer aided design and drafting
State and Institution	PA	Vocational Technical School of Eastern Northampton County
Business		Bethlehem Steel
Business Activity Area		Steel
Institution/Business Relationship		Sharing resources
Type of Training		Systems design
State and Institution	PA	Williamsport Area Community College; Williamsport
Business		Fowler Motors
Business Activity Area		Automotive
Institution/Business Relationship		Contract
Type of Training		Automatic transmission

	ST	INSTITUTION
State and Institution	PA	Williamsport Area Community College; Williamsport
Business		Frito-Lay
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Hardwood lumber production
State and Institution	PA	Williamsport Area Community College; Williamsport
Business		Ilie Division of Market Forge
Business Activity Area		
Institution/Business Relationship		Sharing resources
Type of Training		Sheet metal fabrication
State and Institution	PA	Williamsport Area Community College; Williamsport
Business		J. P. Ward Foundry
Business Activity Area		
Institution/Business Relationship		
Type of Training		Digital electronics
State and Institution	PA	Williamsport Area Community College; Williamsport
Business		Paulsen Wire Rope
Business Activity Area		
Institution/Business Relationship		
Type of Training		Stainless steel welding
State and Institution	PA	Williamsport Area Community College; Williamsport
Business		United Association of Plumbers and Steamfitters Union
Business Activity Area		
Institution/Business Relationship		
Type of Training		Pipe fitting
State and Institution	PA	Williamsport Area Community College; Williamsport
Business		Civil Air Patrol
Business Activity Area		Aircraft
Institution/Business Relationship		
Type of Training		Mobile hydraulics
State and Institution	PA	Williamsport Area Community College; Williamsport
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Mechanical blueprint reading
State and Institution	PA	Williamsport Area Community College; Williamsport
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Welding
State and Institution	PA	Williamsport Area Community College; Williamsport
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Aircraft maintenance

	ST	INSTITUTION
State and Institution	PA	Williamsport Area Community College; Williamsport
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Heavy equipment repair
State and Institution	RI	Community College of Rhode Island; Warwick
Business		National Tooling and Machinery Association
Business Activity Area		Union
Institution/Business Relationship		Apprenticeship
Type of Training		Machine processing apprentices
State and Institution	RI	Community College of Rhode Island; Warwick
Business		General Dynamics, Electric Boat Division
Business Activity Area		Marine
Institution/Business Relationship		Cooperative
Type of Training		Marine assembly machinist
State and Institution	RI	Community College of Rhode Island; Warwick
Business		Foxboro Company
Business Activity Area		
Institution/Business Relationship		Sharing resources
Type of Training		Instrumentation technology
State and Institution	RI	Community College of Rhode Island; Warwick
Business		Health care providers
Business Activity Area		Health
Institution/Business Relationship		
Type of Training		Health care
State and Institution	RI	Community College of Rhode Island; Warwick
Business		Raytheon Company, Submarine Signal Division
Business Activity Area		
Institution/Business Relationship		
Type of Training		Microcomputer
State and Institution	RI	Community College of Rhode Island; Warwick
Business		Metropolitan Life Insurance Company
Business Activity Area		Insurance
Institution/Business Relationship		
Type of Training		Computer aided drafting
State and Institution	RI	Community College of Rhode Island; Warwick
Business		Puritan Life Insurance Company
Business Activity Area		Insurance
Institution/Business Relationship		
Type of Training		Welding
State and Institution	RI	Community College of Rhode Island; Warwick
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Shipfitter

	ST	INSTITUTION
State and Institution	RI	Community College of Rhode Island; Warwick
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Pipefitter
State and Institution	RI	Community College of Rhode Island; Warwick
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Machinist
State and Institution	RI	Community College of Rhode Island; Warwick
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Sheet metal mechanic
State and Institution	RI	Community College of Rhode Island; Warwick
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Digital electronics
State and Institution	RI	Roger Williams College; Bristol
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Engineering technology
State and Institution	SC	Aiken Technical College; Aiken
Business		
Business Activity Area		
Institution/Business Relationship		Sharing resources
Type of Training		Welding
State and Institution	SC	Florence-Darlington Technical College; Florence
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Machine shop
State and Institution	SC	Greenville Technical College; Greenville
Business		General Electric Company
Business Activity Area		Electronics
Institution/Business Relationship		Cooperative
Type of Training		Chemistry
State and Institution	SC	Greenville Technical College; Greenville
Business		Union Carbide
Business Activity Area		Chemical
Institution/Business Relationship		
Type of Training		Engineering technology

	ST	INSTITUTION
State and Institution	SC	Greenville Technical College: Greenville
Business		American Hoechst
Business Activity Area		
Institution/Business Relationship		
Type of Training		Textile management
State and Institution	SC	Greenville Technical College; Greenville
Business		J. P. Stevens
Business Activity Area		Textile
Institution/Business Relationship		
Type of Training		
State and Institution	SC	Greenville Technical College; Greenville
Business		3M
Business Activity Area		
Institution/Business Relationship		
Type of Training		
State and Institution	SC	Kershaw County Area Vocational Center; Kershaw County
Business		B. F. Goodrich
Business Activity Area		Automotive, tires
Institution/Business Relationship		Sharing resources
Type of Training		
State and Institution	SC	Orangeburg, Calhoun Technical College; Orangeburg
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Instructor update
State and Institution	SC	Piedmont Technical Institute; Piedmont
Business		Cincinnati Milacron, Inc.
Business Activity Area		Machine tools, robotics
Institution/Business Relationship		Sharing resources
Type of Training		Robotics
State and Institution	SC	Spartanburg Technical College; Spartanburg
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Instructor update
State and Institution	SC	Tri-County Technical Center; Pendleton
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Microelectronics
State and Institution	SC	Trident Technical Center; Charleston
Business		
Business Activity Area		
Institution/Business Relationship		Sharing resources
Type of Training		Technical engineering

	ST	INSTITUTION
State and Institution	SC	York Technical College: Rock Hill
Business		A celanese fiber plant
Business Activity Area		Celanese fiber plant
Institution/Business Relationship		Sharing resources
Type of Training		Fire technology
State and Institution	TN	Chattanooga State Technical Community College: Chattanooga
Business		Tennessee Valley Authority
Business Activity Area		Utility
Institution/Business Relationship		Contract
Type of Training		Nuclear power plant operator
State and Institution	TN	Chattanooga State Technical Community College: Chattanooga
Business		
Business Activity Area		
Institution/Business Relationship		Customized courses
Type of Training		Autobody and automotive technology
State and Institution	TN	Chattanooga State Technical Community College: Chattanooga
Business		
Business Activity Area		
Institution/Business Relationship		Sharing resources
Type of Training		Air conditioning and refrigeration technology
State and Institution	TN	Chattanooga State Technical Community College: Chattanooga
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Drafting
State and Institution	TN	Chattanooga State Technical Community College: Chattanooga
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Diesel equipment technology
State and Institution	TN	Chattanooga State Technical Community College; Chattanooga
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Welding
State and Institution	TN	Chattanooga State Technical Community College: Chattanooga
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Electricity
State and Institution	TN	Chattanooga State Technical Community College: Chattanooga
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Machine tool technology

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State and Institution                     TN  Chattanooga State Technical Community College: Chattanooga
Business
Business Activity Area
Institution/Business Relationship
Type of Training                              Radio and TV technology

State and Institution                     TN  Chattanooga State Technical Community College: Chattanooga
Business
Business Activity Area
Institution/Business Relationship
Type of Training                              Maintenance

State and Institution                     TN  Chattanooga State Technical Community College: Chattanooga
Business
Business Activity Area
Institution/Business Relationship
Type of Training                              Fork lift operator

State and Institution                     TN  Columbia State Community College: Columbia
Business                                      General Electric Company
Business Activity Area                        Electronics
Institution/Business Relationship             Cooperative
Type of Training

State and Institution                     TN  Roane State Community College: Harriman
Business                                      Local hospitals, nursing homes, and health-related facilities
Business Activity Area                        Health
Institution/Business Relationship             Cooperative
Type of Training                              Respiratory therapy

State and Institution                     TN  Roane State Community College: Harriman
Business                                      Digital Equipment Corporation
Business Activity Area                        Electronics
Institution/Business Relationship             Sharing resources
Type of Training                              Radiology technology

State and Institution                     TN  Roane State Community College: Harriman
Business
Business Activity Area
Institution/Business Relationship
Type of Training                              Mini/microcomputer technology

State and Institution                     TN  Roane State Community College: Harriman
Business
Business Activity Area
Institution/Business Relationship
Type of Training                              Dietetics

State and Institution                     TN  Roane State Community College: Harriman
Business
Business Activity Area
Institution/Business Relationship
Type of Training                              Medical records
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	ST	INSTITUTION
State and Institution	TN	State Technical Institute at Memphis
Business		U. S. Navy
Business Activity Area		Military
Institution/Business Relationship		Cooperative
Type of Training		Data processing
State and Institution	TN	State Technical Institute at Memphis
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Engineering technology
State and Institution	TN	Tennessee Industrial Training Service; Nashville
Business		General Electric
Business Activity Area		Electronics
Institution/Business Relationship		Cooperative
Type of Training		
State and Institution	TN	Tennessee Industrial Training Service; Nashville
Business		Carboloy Systems
Business Activity Area		Alloy manufacture
Institution/Business Relationship		Customized courses
Type of Training		
State and Institution	TN	Tennessee Industrial Training Service; Nashville
Business		Safeguard Engine Parts
Business Activity Area		
Institution/Business Relationship		
Type of Training		
State and Institution	TN	Tennessee Industrial Training Service; Nashville
Business		TOSHIBA
Business Activity Area		Electronics
Institution/Business Relationship		
Type of Training		
State and Institution	TN	Tennessee Industrial Training Service; Nashville
Business		DAB Industries
Business Activity Area		
Institution/Business Relationship		
Type of Training		
State and Institution	TN	Tennessee Industrial Training Service; Nashville
Business		Sharp Manufacturing
Business Activity Area		Electronics
Institution/Business Relationship		
Type of Training		
State and Institution	TX	Austin Community College; Austin
Business		Lockheed
Business Activity Area		Electronics
Institution/Business Relationship		Customized courses
Type of Training		

	ST	INSTITUTION
State and Institution	TX	Austin Community College: Austin
Business		IBM
Business Activity Area		Electronics
Institution/Business Relationship		
Type of Training		
State and Institution	TX	Austin Community College; Austin
Business		Microelectronics
Business Activity Area		Electronics
Institution/Business Relationship		
Type of Training		
State and Institution	TX	Austin Community College: Austin
Business		Computer Technology Corporation
Business Activity Area		Electronics
Institution/Business Relationship		
Type of Training		
State and Institution	TX	Brazosport College; Lake Jackson
Business		
Business Activity Area		Marine industry
Institution/Business Relationship		Sharing resources
Type of Training		Marine technology
State and Institution	TX	Brazosport College; Lake Jackson
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		
State and Institution	TX	Lee College: Baytown
Business		
Business Activity Area		Fuels
Institution/Business Relationship		Contract
Type of Training		
State and Institution	TX	Lee College: Baytown
Business		
Business Activity Area		Chemical
Institution/Business Relationship		
Type of Training		
State and Institution	TX	Lee College; Baytown
Business		
Business Activity Area		Rubber industry
Institution/Business Relationship		
Type of Training		
State and Institution	TX	Lee College; Baytown
Business		
Business Activity Area		Steel
Institution/Business Relationship		
Type of Training		

	ST	INSTITUTION
State and Institution	TX	Midland College: Midland
Business		
Business Activity Area		Fuel industry
Institution/Business Relationship		Cooperative
Type of Training		Oil technology
State and Institution	TX	Mountain View Community College: Dallas
Business		
Business Activity Area		Electronics
Institution/Business Relationship		Cooperative
Type of Training		
State and Institution	TX	North Lake College; Irving
Business		Texas Instruments
Business Activity Area		Optics
Institution/Business Relationship		Cooperative
Type of Training		Optics
State and Institution	TX	North Lake College: Irving
Business		Dallas Home and Apartment Builders Association
Business Activity Area		
Institution/Business Relationship		Apprenticeship
Type of Training		Carpentry
State and Institution	TX	Odessa College; Odessa
Business		Associated Builders and Contractors
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Oil and gas technology
State and Institution	TX	Odessa College: Odessa
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Maintenance engineering
State and Institution	TX	Odessa College; Odessa
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Electricity
State and Institution	TX	Ranger Junior College: Ranger
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Micro/minicomputer operation
State and Institution	TX	Vernon Regional Junior College, North Texas Skills Center
Business		
Business Activity Area		
Institution/Business Relationship		Sharing resources
Type of Training		

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                                       ST   INSTITUTION
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State and Institution                  TX   Vernon Regional Junior College, Sheppard Learning Center
Business                                    U. S. Air Force
Business Activity Area                      Military
Institution/Business Relationship           Cooperative
Type of Training                            Applied science

State and Institution                  UT   College of Eastern Utah; Price
Business
Business Activity Area                      Mining
Institution/Business Relationship           Cooperative
Type of Training                            Coal and uranium mining

State and Institution                  UT   College of Eastern Utah; Price
Business
Business Activity Area
Institution/Business Relationship           Sharing resources
Type of Training                            Mechanical

State and Institution                  UT   College of Eastern Utah; Price
Business
Business Activity Area
Institution/Business Relationship
Type of Training                            Health and safety

State and Institution                  UT   Uintah Basin Area Vocational Center; Roosevelt
Business
Business Activity Area
Institution/Business Relationship           Cooperative
Type of Training                            Petroleum mining technician

State and Institution                  UT   Utah Technical College at Provo/Orem; Provo
Business
Business Activity Area
Institution/Business Relationship           Cooperative
Type of Training

State and Institution                  UT   Utah Technical College at Provo/Orem; Provo
Business                                    Operating Engineers Joint Apprenticeship Committee
Business Activity Area                      Heavy equipment operators
Institution/Business Relationship           Sharing resources
Type of Training                            Heavy equipment operator

State and Institution                  UT   Utah Technical College at Provo/Orem; Provo
Business
Business Activity Area                      Utility
Institution/Business Relationship           Cooperative
Type of Training                            Linesman

State and Institution                  UT   Utah Technical College at Provo/Orem; Provo
Business
Business Activity Area
Institution/Business Relationship           Customized courses
Type of Training                            Fire service
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	ST	INSTITUTION
State and Institution	VA	Temple School; Bailey's Crossroads
Business		Coastal Training Services
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Computer science for deaf
State and Institution	VA	Temple School; Bailey's Crossroads
Business		Tracor Inc.
Business Activity Area		
Institution/Business Relationship		
Type of Training		Electronics for deaf
State and Institution	VA	Temple School; Bailey's Crossroads
Business		Atlantic Research
Business Activity Area		
Institution/Business Relationship		
Type of Training		
State and Institution	VA	Wytheville Community College; Wytheville
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Dental radiation
State and Institution	VA	Wytheville Community College; Wytheville
Business		
Business Activity Area		
Institution/Business Relationship		Customized courses
Type of Training		Computer science
State and Institution	VA	Wytheville Community College; Wytheville
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Data processing
State and Institution	VA	Wytheville Community College; Wytheville
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Sewing machine mechanics
State and Institution	VA	Wytheville Community College; Wytheville
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Time management
State and Institution	VA	Wytheville Community College; Wytheville
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Industrial recreation

	ST	INSTITUTION
State and Institution	WA	Big Bend Community College: Moses Lake
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Auto mechanics
State and Institution	WA	Big Bend Community College: Moses Lake
Business		
Business Activity Area		
Institution/Business Relationship		Sharing resources
Type of Training		Recreation equipment repair
State and Institution	WA	Clover Park Vocational-Technical Institute: Tacoma
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Aviation trade
State and Institution	WA	Clover Park Vocational-Technical Institute: Tacoma
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Food service
State and Institution	WA	Clover Park Vocational-Technical Institute: Tacoma
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Auto service
State and Institution	WA	Clover Park Vocational-Technical Institute: Tacoma
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Health science
State and Institution	WA	Clover Park Vocational-Technical Institute: Tacoma
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Electronics
State and Institution	WA	Clover Park Vocational-Technical Institute: Tacoma
Business		
Business Activity Area		
Institution/Business Relationship		
Type of Training		Graphics
State and Institution	WA	Columbia Basin College; Pasco
Business		
Business Activity Area		
Institution/Business Relationship		Cooperative
Type of Training		Welding

	ST	INSTITUTION
State and Institution	WA	Columbia Basin College; Pasco
Business		
Business Activity Area		Nuclear
Institution/Business Relationship		Sharing resources
Type of Training		Nuclear technology
State and Institution	WA	Edmonds Community College; Lynwood
Business		Snohomish County Public Utility District
Business Activity Area		Utility
Institution/Business Relationship		Contract
Type of Training		Energy management technology
State and Institution	WA	Edmonds Community College; Lynwood
Business		
Business Activity Area		Earth and rock drilling industry
Institution/Business Relationship		Sharing resources
Type of Training		
State and Institution	WA	Edmonds Community College; Lynwood
Business		
Business Activity Area		Forest harvesting
Institution/Business Relationship		
Type of Training		
State and Institution	WA	Walla Walla Community College; Walla Walla
Business		
Business Activity Area		Irrigation
Institution/Business Relationship		Sharing resources
Type of Training		Electricty and electronics technician
State and Institution	WI	Lakeshore Technical Institute; Cleveland
Business		Kohler
Business Activity Area		Manufacturing
Institution/Business Relationship		Cooperative
Type of Training		Engine mechanic
State and Institution	WI	Lakeshore Technical Institute; Cleveland
Business		
Business Activity Area		
Institution/Business Relationship		Sharing resources
Type of Training		
State and Institution	WI	Mid-State Technical College; Marshfield
Business		Local hospitals
Business Activity Area		Health
Institution/Business Relationship		Cooperative
Type of Training		Respiratory therapy
State and Institution	WI	Milwaukee Area Technical College; Milwaukee
Business		Allen Bradley Company
Business Activity Area		Computer graphics
Institution/Business Relationship		Cooperative
Type of Training		Computer graphics technician

	ST	INSTITUTION
State and Institution	WI	Milwaukee Area Technical College; Milwaukee
Business		
Business Activity Area		
Institution/Business Relationship		Sharing resources
Type of Training		
State and Institution	WI	North Central Technical Institute; Wausau
Business		Wausau Hospital
Business Activity Area		Health
Institution/Business Relationship		Cooperative
Type of Training		Radiologic technology
State and Institution	WI	Waukesha County Technical Institute; Pewaukee
Business		General Electric
Business Activity Area		Electronics
Institution/Business Relationship		Cooperative
Type of Training		
State and Institution	WV	Fairmont State College; Fairmont
Business		Monongahela Power Company
Business Activity Area		Utility
Institution/Business Relationship		Cooperative
Type of Training		Data processing programming
State and Institution	WY	Casper College; Casper
Business		Associated Builders and Contractors
Business Activity Area		Construction
Institution/Business Relationship		Cooperative
Type of Training		Construction estimating

APPENDIX B

ALPHABETICAL LISTING OF IDENTIFIED TRAINING BY EDUCATIONAL INSTITUTIONS

ALPHABETICAL LISTING OF IDENTIFIED TRAINING BY EDUCATIONAL INSTITUTIONS

TRAINING	ST	INSTITUTION
	AL	Calhoun Community College; Decatur
	AL	Calhoun Community College; Decatur
	AZ	Northland Pioneer College; Holbrook
	AZ	Rio Salado Community College; Phoenix
	AZ	Rio Salado Community College; Phoenix
	CA	Los Angeles Community College district
	CA	Los Angeles Community College district
	CA	Los Angeles Community College district
	CA	Los Angeles Community College district
	CA	Lynwood High Schools
	CO	Northeastern Junior College; Sterling
	GA	Dalton Junior College; Dalton
	GA	The State of Georgia
	IA	Community College, Drake Univ., National Institute of Technology
	IL	College of Lake County; Grayslake
	IL	Illinois Central College
	IL	John Wood Community College; Quincy
	IL	Moraine Valley Community College; Palos Hills
	IL	Prairie State College; Chicago Heights
	IL	Rend Lake College; Ina
	LA	Delgado Community College; New Orleans
	MA	Bunker Hill Community College; Boston
	MA	Greater Lowell Regional Vocational Technical School; Lowell
	MA	North Shore Community College; Beverly
	ME	University of Maine at Augusta
	MI	Bay de Noc Community College; Escanaba
	MI	McComb Community College; Warren
	MI	McComb Community College; Warren
	MI	McComb Community College; Warren
	MO	Northeast Missouri State University; Kirksville
	MO	Northeast Missouri State University; Kirksville
	MO	St. Louis Community College; St. Louis
	MO	State Fair Community College; Sedalia
	MS	Itawamba Junior College; Tupelo
	NC	Asheville-Buncombe Technical College; Asheville
	NC	Cape Fear Technical Institute; Wilmington
	NC	Durham Technical Institute; Durham
	NC	Durham Technical Institute; Durham
	NC	Durham Technical Institute; Durham
	NC	Forsythe Technical Institute; Winston-Salem
	NC	Wake Technical College; Raleigh
	NJ	Bergen County Vocational Technical School; Hackensack
	NJ	Bergen County Vocational Technical School; Hackensack
	NJ	Bergen County Vocational Technical School; Hackensack
	NM	New Mexico State University, Alamogordo
	NY	Duchess Community College; Poughkeepsie
	NY	Duchess Community College; Poughkeepsie
	NY	Nassau County schools
	NY	Nassau County schools
	NY	Nassau County schools

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TRAINING	ST	INSTITUTION
	NY	Nassau County schools
	NY	Nassau County schools
	NY	Nassau County schools
	NY	Nassau County schools
	NY	Nassau County schools
	NY	Nassau County schools
	NY	Nassau County schools
	NY	Nassau County schools
	NY	Orange County Community College; Middletown
	NY	Westchester County schools
	NY	Westchester County schools
	OH	Ohio State University at Columbus
	OH	Ohio State University at Mansfield
	OK	South Oklahoma City Junior College; Oklahoma City
	OK	South Oklahoma City Junior College; Oklahoma City
	OR	Lane Community College; Eugene
	OR	Southwestern Oregon Community College; Coos Bay
	PA	Allentown, PA Business Council
	PA	Control Data Institute; Pittsburgh
	PA	Four advanced technical centers
	SC	Greenville Technical College; Greenville
	SC	Greenville Technical College; Greenville
	SC	Kershaw County Area Vocational Center; Kershaw County
	TN	Columbia State Community College; Columbia
	TN	Tennessee Industrial Training Service; Nashville
	TN	Tennessee Industrial Training Service; Nashville
	TN	Tennessee Industrial Training Service; Nashville
	TN	Tennessee Industrial Training Service; Nashville
	TN	Tennessee Industrial Training Service; Nashville
	TN	Tennessee Industrial Training Service; Nashville
	TX	Austin Community College; Austin
	TX	Austin Community College; Austin
	TX	Austin Community College; Austin
	TX	Austin Community College; Austin
	TX	Brazosport College; Lake Jackson
	TX	Lee College; Baytown
	TX	Lee College; Baytown
	TX	Lee College; Baytown
	TX	Lee College; Baytown
	TX	Mountain View Community College; Dallas
	TX	Vernon Regional Junior College, North Texas Skills Center
	UT	Utah Technical College at Provo/Orem; Provo
	WA	Edmonds Community College; Lynnwood
	WA	Edmonds Community College; Lynnwood
	WI	Lakeshore Technical Institute; Cleveland
	WI	Milwaukee Area Technical College; Milwaukee
	WI	Waukesha County Technical Institute; Pewaukee
Aerospace	CA	Orange County Colleges; Garden Grove
Air conditioning and refrigeration technology	TN	Chattanooga State Technical Community College; Chattanooga
Air conditioning technology	IL	College of DuPage; Glen Ellyn

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ALPHABETICAL LISTING OF IDENTIFIED TRAINING BY EDUCATIONAL INSTITUTIONS

TRAINING	ST	INSTITUTION
Aircraft maintenance	PA	Williamsport Area Community College; Williamsport
Airframe mechanics	AR	Phillips County Community College; Helena
Applied science	TX	Vernon Regional Junior College, Sheppard Learning Center
Auto body and mechanics	NJ	RCA Training and Placement Services, Monmouth County
Auto insurance	FL	Santa Fe Community College; Gainesville
Auto mechanics	ND	North Dakota School of Science; Wahpeton
Auto mechanics	WA	Big Bend Community College; Moses Lake
Auto service	WA	Clover Park Vocational-Technical Institute; Tacoma
Autobody and automotive technology	TN	Chattanooga State Technical Community College; Chattanooga
Automatic transmission	PA	Williamsport Area Community College; Williamsport
Automation technology	MO	Jefferson City local schools; Jefferson City
Automotive claims insurance adjuster	MI	Oakland Community College; Auburn Heights
Automotive maintenance	NC	Durham Technical Institute; Durham
Automotive mechanic apprentice	IL	Triton College; River Grove
Automotive service technician	MI	Macomb Community College; Warren
Aviation trade	WA	Clover Park Vocational-Technical Institute; Tacoma
Basic die theory	IL	College of DuPage; Glen Ellyn
Basic machining	OH	Cuyahoga Community College; Cleveland
Blueprint reading	ID	Idaho State University; Pocatello
Blueprint reading	NC	Caldwell Community Technical Institute; Hudson
Blueprint reading	OR	Portland Community College; Portland
Bookkeeping	OR	Rogue Community College; Grants Pass
Building operation and maintenance	ND	North Dakota School of Science; Wahpeton
Cabinetmaking, pre-apprenticeship for women	NY	All-Craft Center; New York City
Cable TV installation and maintenance	IL	Moraine Valley Community College; Palos Hills
Carpenter helper	ND	North Dakota School of Science; Wahpeton
Carpentry	TX	North Lake College; Irving
Carpentry, pre-apprenticeship for women	NY	All-Craft Center; New York City
Chemical operations	CO	Community College of Denver, Red Rocks Campus; Golden
Chemical technology	NY	Onondaga Community College; Syracuse
Chemistry	SC	Greenville Technical College; Greenville
Climate control technology	MI	Oakland Community College; Auburn Heights
Clinical instruction for nursing students	NM	Eastern New Mexico University, Roswell Campus
Coal and uranium mining	UT	College of Eastern Utah; Price
Communications	IL	College of DuPage; Glen Ellyn
Communications	NJ	Mercer County Community College; Trenton
Communications	NY	Hudson Valley Community College; Troy
Components and systems maintenance of hydraulic systems	PA	Northampton County Area Community College
Computer aided design	IL	Joliet Community College and seven area High Schools
Computer aided design	PA	Elliott Training Center; New Stanton
Computer aided design and drafting	PA	SLN Area Vocational-Technical School; New Brunswick
Computer aided design and manufacturing	NY	Niagara County Community College; Niagara Falls
Computer aided drafting	RI	Community College of Rhode Island; Warwick
Computer aided manufacturing	IL	Triton College; River Grove
Computer assisted apparel production	CA	Los Angeles Community College district
Computer assisted design	CA	Los Angeles Community College district
Computer assisted drafting	CA	Los Angeles Community College district
Computer assisted drafting/graphics	OR	Chemeketa Junior College; Salem
Computer assisted manufacturing	CA	Los Angeles Community College district
Computer delivery systems	OH	Cuyahoga Community College; Cleveland

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ALPHABETICAL LISTING OF IDENTIFIED TRAINING BY EDUCATIONAL INSTITUTIONS

TRAINING	ST	INSTITUTION
Computer design	IL	Elgin Community College; Elgin
Computer graphics technician	WI	Milwaukee Area Technical College; Milwaukee
Computer manufacture	CA	Diablo Valley College; Pleasant Hill
Computer operations	NY	Affirmative Action Program
Computer operations	OR	Chemeketa Junior College; Salem
Computer programming	MA	Regis College of Weston; Weston
Computer programming	NY	Affirmative Action Program
Computer science	IL	Black Hawk College East Campus; Kewanee
Computer science	MA	North Shore Community College; Beverly
Computer science	ME	Training Resource Center; Cumberland County
Computer science	VA	Wytheville Community College; Wytheville
Computer science for deaf	VA	Temple School; Bailey's Crossroads
Computer technology	MD	Dundalk Community College; Baltimore
Computer technology	MD	Essex Community College; Baltimore
Computer training	CA	Computer Training Center; San Diego
Computerized production management	CA	Los Angeles Community College district
Computerized numerical control machinist	CA	Los Angeles Community College district
Concrete/masonry technology	MI	Alpena Community College; Alpena
Construction estimating	WY	Casper College; Casper
Copier machine technician	NY	Nassau County schools
Copy machine repair	NJ	RCA Training and Placement Services, Monmouth County
Data entry	NJ	RCA Training and Placement Services, Monmouth County
Data entry	NY	Affirmative Action Program
Data processing	IL	City Colleges of Chicago, Chicago City-Wide College
Data processing	IL	College of DuPage; Glen Ellyn
Data processing	NY	Hudson Valley Community College; Troy
Data processing	OR	Rogue Community College; Grants Pass
Data processing	TN	State Technical Institute at Memphis
Data processing	VA	Wytheville Community College; Wytheville
Data processing instructor update	DE	Delaware Technical and Community College; Wilmington
Data processing programming	WV	Fairmont State College; Fairmont
Dental radiation	VA	Wytheville Community College; Wytheville
Diagramming/management	FL	Pensacola Junior College; Pensacola
Diesel equipment technology	TN	Chattanooga State Technical Community College; Chattanooga
Diesel mechanics	ND	North Dakota School of Science; Wahpeton
Dietetics	TN	Roane State Community College; Harriman
Digital electronics	PA	Williamsport Area Community College; Williamsport
Digital electronics	RI	Community College of Rhode Island; Warwick
Drafting	TN	Chattanooga State Technical Community College; Chattanooga
Drafting internship	ID	Idaho State University; Pocatello
Electric maintenance	MD	Dundalk Community College; Baltimore
Electrical	OH	Lorain County Community College; Elyria
Electrical maintenance apprenticeship	GA	Bainbridge Junior College; Bainbridge
Electrical technician	NC	Durham Technical Institute; Durham
Electrical technology	MI	Oakland Community College; Auburn Heights
Electrical technology	NY	Onondaga Community College; Syracuse
Electrical, pre-apprenticeship for women	NY	All-Craft Center; New York City
Electrician	MT	Miles Community College; Miles City
Electrician apprentice	MI	Kalamazoo Valley Community College; Kalamazoo
Electricity	CO	Colorado Mountain College; Glenwood Springs

ALPHABETICAL LISTING OF IDENTIFIED TRAINING BY EDUCATIONAL INSTITUTIONS

TRAINING	ST	INSTITUTION
Electricity	LA	Delgado Community College; New Orleans
Electricity	NJ	Bergen County Vocational Technical School; Hackensack
Electricity	TN	Chattanooga State Technical Community College; Chattanooga
Electricity	TX	Odessa College; Odessa
Electricty and electronics technician	WA	Walla Walla Community College; Walla Walla
Electromechanical technology	MA	North Shore Community College; Beverly
Electronic fabrication	OR	Linn-Benton Community College; Albany
Electronic phone technician	CA	Los Angeles Community College district
Electronic technician	CA	Palomar Community College; San Marcos
Electronic technician	MA	Bunker Hill Community College; Boston
Electronic technology	FL	Santa Fe Community College; Gainesville
Electronics	CA	El Camino College; Torrance
Electronics	CA	Evergreen Valley; San Jose
Electronics	CA	Orange County Colleges; Garden Grove
Electronics	CT	Manchester Community College; Manchester
Electronics	ID	Idaho State University; Pocatello
Electronics	IL	College of DuPage; Glen Ellyn
Electronics	LA	Delgado Community College; New Orleans
Electronics	MD	Dundalk Community College; Baltimore
Electronics	MD	Essex Community College; Baltimore
Electronics	NC	Durham Technical Institute; Durham
Electronics	NJ	Bergen County Vocational Technical School; Hackensack
Electronics	NY	Career Training Center; New York City
Electronics	NY	Westchester County schools
Electronics	OR	Chemeketa Junior College; Salem
Electronics	OR	Portland Community College; Portland
Electronics	WA	Clover Park Vocational-Technical Institute; Tacoma
Electronics for deaf	VA	Temple School; Bailey's Crossroads
Electronics technician	CO	Pikes Peak Community College; Colorado Springs
Emergency medical technician	LA	Delgado Community College; New Orleans
Energy management	MI	Oakland Community College; Auburn Heights
Energy management technology	WA	Edmonds Community College; Lynnwood
Energy process operator	ND	Bismarck Junior College; Bismarck
Engine lathe operation	NJ	Cumberland County College; Vineland
Engine mechanic	OH	Lakeshore Technical Institute; Cleveland
Engineering instructor update	DE	Delaware Technical and Community College; Wilmington
Engineering technology	RI	Roger Williams College; Bristol
Engineering technology	SC	Greenville Technical College; Greenville
Engineering technology	TN	State Technical Institute at Memphis
Fire extinguisher maintenance for women and minorities	FL	Santa Fe Community College; Gainesville
Fire insurance	FL	Santa Fe Community College; Gainesville
Fire science	NM	San Juan College; Farmington
Fire service	UT	Utah Technical College at Provo/Orem; Provo
Fire technology	SC	York Technical College; Rock Hill
Food service	WA	Clover Park Vocational-Technical Institute; Tacoma
Fork lift operator	TN	Chattanooga State Technical Community College; Chattanooga
Graphic arts/Advertising technology	NY	Onondaga Community College; Syracuse
Graphics	WA	Clover Park Vocational-Technical Institute; Tacoma
Ground and line work for women and minorities	FL	Santa Fe Community College; Gainesville
Hardwood lumber production	PA	Williamsport Area Community College; Williamsport

ALPHABETICAL LISTING OF IDENTIFIED TRAINING BY EDUCATIONAL INSTITUTIONS

TRAINING	ST	INSTITUTION
Health and safety	UT	College of Eastern Utah; Price
Health care	RI	Community College of Rhode Island; Warwick
Health science	WA	Clover Park Vocational-Technical Institute; Tacoma
Heavy equipment operator	UT	Utah Technical College at Provo/Orem; Provo
Heavy equipment repair	PA	Williamsport Area Community College; Williamsport
Hydraulics	CO	Colorado Mountain College; Glenwood Springs
Industrial engineer management	OH	Muskingum Area Technical College; Zanesville
Industrial hydraulics	PA	Bethlehem Area Vocational Technical School; Northampton County
Industrial mechanics	OR	Central Oregon Community College; Bend
Industrial recreation	VA	Wytheville Community College; Wytheville
Industrial skills	OR	Chemeketa Junior College; Salem
Installation for cable television	CA	Southwestern Cable TV Training Center; San Diego
Instructor update	MD	Hagerstown Junior College; Hagerstown
Instructor update	NC	Central Piedmont Community College; Charlotte
Instructor update	NC	Pitt Community College; Greenville
Instructor update	SC	Orangeburg, Calhoun Technical College; Orangeburg
Instructor update	SC	Spartanburg Technical College; Spartanburg
Instrumentation	MT	Miles Community College; Miles City
Instrumentation electronics	FL	Pensacola Junior College; Pensacola
Instrumentation engineering	NM	University of New Mexico, Los Alamos
Instrumentation technology	RI	Community College of Rhode Island; Warwick
Job skills	PA	Philadelphia High School Academies
Journalism	NY	Onondaga Community College; Syracuse
Laser technology	NM	University of New Mexico, Los Alamos
Laser technology	OH	Cincinnati Technical College; Cincinnati
Lineman	UT	Utah Technical College at Provo/Orem; Provo
Machine Mechanics	NJ	Bergen County Vocational Technical School; Hackensack
Machine operation	CT	Manchester Community College; Manchester
Machine operator	IA	Indian Hills Community College; Ottumwa
Machine operator	NC	Central Carolina Technical College; Sanford
Machine processing apprentices	RI	Community College of Rhode Island; Warwick
Machine repair	MI	Kalamazoo Valley Community College; Kalamazoo
Machine shop	SC	Florence-Darlington Technical College; Florence
Machine shop practices	NJ	Cumberland County College; Vineland
Machine tool	OH	Cuyahoga Community College; Cleveland
Machine tool operation	CO	Community College of Denver, Red Rocks Campus; Golden
Machine tool technology	NJ	Passaic County Community College; Paterson
Machine tool technology	NM	New Mexico State University, Alamogordo
Machine tool technology	TN	Chattanooga State Technical Community College; Chattanooga
Machinist	MA	North Shore Community College; Beverly
Machinist	NC	Durham Technical Institute; Durham
Machinist	OH	Lorain County Community College; Elyria
Machinist	RI	Community College of Rhode Island; Warwick
Machinist apprentice	MI	Kalamazoo Valley Community College; Kalamazoo
Maintenance	NC	Robeson Technical College; Lumberton
Maintenance	TN	Chattanooga State Technical Community College; Chattanooga
Maintenance engineering	TX	Odessa College; Odessa
Maintenance mechanic	NC	Durham Technical Institute; Durham
Maintenance technician	NC	Rowan Technical College; Salisbury
Management	NJ	Mercer County Community College; Trenton

ALPHABETICAL LISTING OF IDENTIFIED TRAINING BY EDUCATIONAL INSTITUTIONS

TRAINING	ST	INSTITUTION
Management	NY	Hudson Valley Community College; Troy
Manufacturing technology	IL	College of DuPage; Glen Ellyn
Manufacturing technology	IL	College of Lake County; Grayslake
Marine architecture	NJ	Burlington County College; Pemberton
Marine assembly machinist	RI	Community College of Rhode Island; Warwick
Marine equipment technology	OR	Clatsop Community College; Astoria
Marine technology	TX	Brazosport College; Lake Jackson
Masonry, pre-apprenticeship for women	NY	All-Craft Center; New York City
Math	NY	Affirmative Action Programs
Math	NY	Hudson Valley Community College; Troy
Mechanic	MI	Kalamazoo Valley Community College; Kalamazoo
Mechanical	UT	College of Eastern Utah; Price
Mechanical blueprint reading	PA	Williamsport Area Community College; Williamsport
Mechanical maintenance apprenticeship	GA	Bainbridge Junior College; Bainbridge
Mechanics	CO	Colorado Mountain College; Glenwood Springs
Mechanics	MT	Miles Community College; Miles City
Medical records	TN	Roane State Community College; Harriman
Medical technology	MA	Franklin Institute; Boston
Mental health	MA	North Shore Community College; Beverly
Micro processing	FL	Pensacola Junior College; Pensacola
Micro-computer technician	MD	Prince Georges Community College
Micro/minicomputer operation	TX	Ranger Junior College; Ranger
Microcomputer	RI	Community College of Rhode Island; Warwick
Microcomputer repair	NY	Career Training Center; New York City
Microelectronics	SC	Tri-County Technical Center; Pendleton
Microelectronics technician	CA	Palomar Community College; San Marcos
Microprocessor repair	OR	Chemeketa Junior College; Salem
Microwave technician	CA	Los Angeles Community College district
Microwave technology	CA	Los Angeles Community College district
Millwright	IN	Indiana Vocational Technical College; Gary
Millwright	OH	Lorain County Community College; Elyria
Millwright apprentice	MI	Kalamazoo Valley Community College; Kalamazoo
Mine maintenance	CO	Colorado Mountain College; Glenwood Springs
Mini/microcomputer technology	TN	Roane State Community College; Harriman
Minicomputer technician	GA	Dalton Junior College; Dalton
Minicomputer technology	MA	Franklin Institute; Boston
Mining technology	IL	Rend Lake College; Ina
Mobile equipment repair	OH	Lorain County Community College; Elyria
Mobile home construction	OR	Chemeketa Junior College; Salem
Mobile hydraul[illegible]	PA	Williamsport Area Community College; Williamsport
Motor inspection apprentice	IN	Indiana Vocational Technical College; Gary
Natural gas industry technician	LA	Delgado Community College; New Orleans
Nuclear power plant operator	TN	Chattanooga State Technical Community College; Chattanooga
Nuclear technology	WA	Columbia Basin College; Pasco
Nursing assistant	IL	College of DuPage; Glen Ellyn
Occupational therapy assistant	IL	City Colleges of Chicago, Chicago City-Wide College
Occupational therapy assistant	MA	North Shore Community College; Beverly
Office machine repair technology	OR	Central Oregon Community College; Bend
Oil and gas technology	TX	Odessa College; Odessa
Oil shale technology	CO	Colorado Mountain College; Glenwood Springs

ALPHABETICAL LISTING OF IDENTIFIED TRAINING BY EDUCATIONAL INSTITUTIONS

TRAINING	ST	INSTITUTION
Oil technology	TX	Midland College; Midland
Optics	NY	Monroe Community College; Rochester
Optics	OH	Cincinnati Technical College; Cincinnati
Optics	TX	North Lake College; Irving
Optics (laser)	CA	Los Angeles Community College district
Painting, pre-apprenticeship for women	NY	All-Craft Center; New York City
Paramedic	IL	City Colleges of Chicago, Chicago City-Wide College
Petroleum industry technician	LA	Delgado Community College; New Orleans
Petroleum mining technician	UT	Uintah Basin Area Vocational Center; Roosevelt
Pipe fitting	FL	Pensacola Junior College; Pensacola
Pipe fitting	PA	Williamsport Area Community College; Williamsport
Pipefitter	RI	Community College of Rhode Island; Warwick
Pipefitter apprentice	MI	Kalamazoo Valley Community College; Kalamazoo
Pipefitting	CO	Community College of Denver, Red Rocks Campus; Golden
Piping systems for ships	NJ	Burlington County College; Pemberton
Plastic technology	IL	College of DuPage; Glen Ellyn
Plumbing codes	OR	Portland Community College; Portland
Plumbing, pre-apprenticeship for women	NY	All-Craft Center; New York City
Power distribution	OR	Portland Community College; Portland
Power plant mechanics	AR	Phillips County Community College; Helena
Power plant operator technology	AZ	Northland Pioneer College; Holbrook
Powerhouse mechanic	MI	Kalamazoo Valley Community College; Kalamazoo
Precision machining	OR	Rogue Community College; Grants Pass
Quality control	AZ	Glendale Community College; Glendale
Radiation therapy technology	IL	City Colleges of Chicago, Chicago City-Wide College
Radio and TV technology	TN	Chattanooga State Technical Community College; Chattanooga
Radiologic technology	IL	Kankakee Community College; Kankakee
Radiologic technology	WI	North Central Technical Institute; Wausau
Radiology technology	TN	Roane State Community College; Harriman
Recreation equipment repair	WA	Big Bend Community College; Moses Lake
Refractory masonry	OH	Lorain County Community College; Elyria
Respiratory therapy	TN	Roane State Community College; Harriman
Respiratory therapy	WI	Mid-State Technical College; Marshfield
Robotics	CA	Los Angeles Community College district
Robotics	IL	College of Lake County; Grayslake
Robotics	IL	Triton College; River Grove
Robotics	MI	Macomb Community College; Warren
Robotics	MI	Oakland Community College; Auburn Heights
Robotics	PA	Elliott Training Center; Greensburg
Robotics	SC	Piedmont Technical Institute; Piedmont
Robotics repair	PA	Community College of Allegheny County; Pittsburgh
Schematic wiring	FL	Pensacola Junior College; Pensacola
Secretarial skills	NY	Hudson Valley Community College; Troy
Sewing machine mechanics	VA	Wytheville Community College; Wytheville
Sheet metal	CT	Manchester Community College; Manchester
Sheet metal	NC	Durham Technical Institute; Durham
Sheet metal fabrication	MO	Jefferson College; Hillsboro
Sheet metal fabrication	PA	Williamsport Area Community College; Williamsport
Sheet metal mechanic	RI	Community College of Rhode Island; Warwick
Sheetmetal	IA	Indian Hills Community College; Ottumwa

TRAINING	ST	INSTITUTION
Shipfitter	RI	Community College of Rhode Island; Warwick
Skilled craft apprenticeship	IL	College of Lake County; Grayslake
Small motor repair for women and minorities	FL	Santa Fe Community College; Gainesville
Software design engineering	IL	Triton College; River Grove
Solar water heating	NC	Mayland Technical College; Spruce Pine
Solid state circuitry	NY	Westchester County schools
Stainless steel welding	PA	Williamsport Area Community College; Williamsport
Systems design	PA	Vocational Technical School of Eastern Northampton County
Technical engineering	SC	Trident Technical Center; Charleston
Technical programs	NJ	Mercer County Community College; Trenton
Technical writing	IL	College of DuPage; Glen Ellyn
Technical writing	OR	Portland Community College; Portland
Technician in petroleum production	NM	Eastern New Mexico University, Roswell Campus
Technology-oriented high school education	NY	Manhattan Center for Science and Mathematics
Telecommunications	ND	North Dakota School of Science; Wahpeton
Telecommunications	NY	Career Training Center; New York City
Telephone installation and interconnect	NJ	RCA Training and Placement Services, Monmouth County
Television delivery systems	OH	Cuyahoga Community College; Cleveland
Textile management	SC	Greenville Technical College; Greenville
Time management	VA	Wytheville Community College; Wytheville
Tool and die apprentice	MI	Kalamazoo Valley Community College; Kalamazoo
Tool and die moldmaker apprentice	MI	Kalamazoo Valley Community College; Kalamazoo
Toolroom management	NC	Caldwell Community Technical Institute; Hudson
Typing and office practice	NY	Affirmative Action Programs
Video game and vending machine repair for women and minorities	FL	Santa Fe Community College; Gainesville
Vocational math	NJ	Bergen County Vocational Technical School; Hackensack
Vocational-technical	NY	Suffolk Community College; Selden
Weatherization technician	ND	North Dakota School of Science; Wahpeton
Welding	CO	Colorado Mountain College; Glenwood Springs
Welding	CO	Community College of Denver, Red Rocks Campus; Golden
Welding	IA	Indian Hills Community College; Ottumwa
Welding	ID	Idaho State University; Pocatello
Welding	ME	Training Resource Center; Cumberland County
Welding	MO	Jefferson College; Hillsboro
Welding	ND	North Dakota School of Science; Wahpeton
Welding	OR	Portland Community College; Portland
Welding	PA	Williamsport Area Community College; Williamsport
Welding	RI	Community College of Rhode Island; Warwick
Welding	SC	Aiken Technical College; Aiken
Welding	TN	Chattanooga State Technical Community College; Chattanooga
Welding	WA	Columbia Basin College; Pasco
Welding apprentice	IN	Indiana Vocational Technical College; Gary
Welding technology	AR	Phillips County Community College; Helena
Word processing	CO	Community College of Denver, Red Rocks Campus; Golden
Word processing	IL	Technical Assistance Training Corporation; Chicago
Word processing	NY	Affirmative Action Programs
Word processing	NY	Career Training Center; New York City
Word processing	OR	Chemeketa Junior College; Salem
Word processing	OR	Rogue Community College; Grants Pass
X-Ray technology	LA	Delgado Community College; New Orleans

APPENDIX C

ALPHABETICAL LISTING OF IDENTIFIED COMPANIES BY EDUCATIONAL INSTITUTION

ALPHABETICAL LISTING OF COMPANIES BY EDUCATIONAL INSTITUTION

BUSINESS	TYPE	ST	INSTITUTION
		AL	Calhoun Community College; Decatur
		AL	Calhoun Community College; Decatur
		AR	Phillips County Community College; Helena
		AZ	Northland Pioneer College; Holbrook
		AZ	Rio Salado Community College; Phoenix
		AZ	Rio Salado Community College; Phoenix
		CA	El Camino College; Torrance
		CA	Evergreen Valley; San Jose
		CA	Orange County Colleges; Garden Grove
		CA	Orange County Colleges; Garden Grove
		CA	Palomar Community College; San Marcos
		CO	Colorado Mountain College; Glenwood Springs
		CO	Colorado Mountain College; Glenwood Springs
		CO	Colorado Mountain College; Glenwood Springs
		CO	Colorado Mountain College; Glenwood Springs
		CO	Colorado Mountain College; Glenwood Springs
		CO	Community College of Denver, Red Rocks Campus; Golden
		CO	Community College of Denver, Red Rocks Campus; Golden
		CO	Community College of Denver, Red Rocks Campus; Golden
		CO	Community College of Denver, Red Rocks Campus; Golden
		CO	Community College of Denver, Red Rocks Campus; Golden
		CO	Northeastern Junior College; Sterling
		CO	Pikes Peak Community College; Colorado Springs
		CT	Manchester Community College; Manchester
		CT	Manchester Community College; Manchester
		DE	Delaware Technical and Community College; Wilmington
		DE	Delaware Technical and Community College; Wilmington
		FL	Pensacola Junior College; Pensacola
		FL	Pensacola Junior College; Pensacola
		FL	Pensacola Junior College; Pensacola
		FL	Pensacola Junior College; Pensacola
	Cable television	FL	Santa Fe Community College; Gainesville
		FL	Santa Fe Community College; Gainesville
		FL	Santa Fe Community College; Gainesville
		GA	Bainbridge Junior College; Bainbridge
		GA	Bainbridge Junior College; Bainbridge
		GA	Dalton Junior College; Dalton
		GA	The State of Georgia
		IA	Community College, Drake Univ., National Institute of Technology
		IA	Indian Hills Community College; Ottumwa
		IA	Indian Hills Community College; Ottumwa
		IA	Indian Hills Community College; Ottumwa
		ID	Idaho State University; Pocatello
		ID	Idaho State University; Pocatello
		ID	Idaho State University; Pocatello
		ID	Idaho State University; Pocatello
		IL	Black Hawk College East Campus; Kewanee
		IL	City Colleges of Chicago, Chicago City-Wide College
		IL	City Colleges of Chicago, Chicago City-Wide College
		IL	City Colleges of Chicago, Chicago City-Wide College

ALPHABETICAL LISTING OF COMPANIES BY EDUCATIONAL INSTITUTION

BUSINESS	TYPE	ST	INSTITUTION
		IL	College of DuPage; Glen Ellyn
		IL	College of DuPage; Glen Ellyn
		IL	College of DuPage; Glen Ellyn
		IL	College of DuPage; Glen Ellyn
		IL	College of DuPage; Glen Ellyn
		IL	College of DuPage; Glen Ellyn
		IL	College of DuPage; Glen Ellyn
		IL	College of DuPage; Glen Ellyn
		IL	College of DuPage; Glen Ellyn
		IL	John Wood Community College; Quincy
		IL	Joliet Community College and seven area High Schools
		IL	Moraine Valley Community College; Palos Hills
		IL	Prairie State College; Chicago Heights
		IL	Triton College; River Grove
		IN	Indiana Vocational Technical College; Gary
		IN	Indiana Vocational Technical College; Gary
		IN	Indiana Vocational Technical College; Gary
		LA	Delagado Community College; New Orleans
		LA	Delagado Community College; New Orleans
		LA	Delagado Community College; New Orleans
	Fuels	LA	Delagado Community College; New Orleans
		LA	Delagado Community College; New Orleans
		MA	Bunker Hill Community College; Boston
		MA	Bunker Hill Community College; Boston
		MA	Greater Lowell Regional Vocational Technical School; Lowell
		MD	Dundalk Community College; Baltimore
		MD	Dundalk Community College; Baltimore
		MD	Essex Community College; Baltimore
		MD	Essex Community College; Baltimore
		MD	Hagerstown Junior College; Hagerstown
		ME	Training Resource Center; Cumberland County
		ME	Training Resource Center; Cumberland County
		ME	University of Maine at Augusta
		MI	Bay de Noc Community College; Escanaba
		MI	Kalamazoo Valley Community College; Kalamazoo
		MI	Kalamazoo Valley Community College; Kalamazoo
		MI	Kalamazoo Valley Community College; Kalamazoo
		MI	Kalamazoo Valley Community College; Kalamazoo
		MI	Kalamazoo Valley Community College; Kalamazoo
		MI	Kalamazoo Valley Community College; Kalamazoo
		MI	Kalamazoo Valley Community College; Kalamazoo
		MI	Kalamazoo Valley Community College; Kalamazoo
		MI	Kalamazoo Valley Community College; Kalamazoo
		MI	Oakland Community College; Auburn Heights
		MO	Jefferson College; Hillsboro
		MO	Jefferson College; Hillsboro
		MO	Northeast Missouri State University; Kirksville
		MO	Northeast Missouri State University; Kirksville
		MO	St. Louis Community College; St. Louis
		MO	State Fair Community College; Sedalia

ALPHABETICAL LISTING OF COMPANIES BY EDUCATIONAL INSTITUTION

BUSINESS	TYPE	ST	INSTITUTION
		MS	Itawamba Junior College; Tupelo
		MT	Miles Community College; Miles City
		MT	Miles Community College; Miles City
		NC	Asheville-Buncombe Technical College; Asheville
		NC	Caldwell Community Technical Institute; Hudson
	Marine	NC	Cape Fear Technical Institute; Wilmington
		NC	Central Carolina Technical College; Sanford
		NC	Central Piedmont Community College; Charlotte
		NC	Forsythe Technical Institute; Winston-Salem
		NC	Pitt Community College; Greenville
		NC	Wake Technical College; Raleigh
		ND	North Dakota School of Science; Wahpeton
		ND	North Dakota School of Science; Wahpeton
		ND	North Dakota School of Science; Wahpeton
		ND	North Dakota School of Science; Wahpeton
		ND	North Dakota School of Science; Wahpeton
		ND	North Dakota School of Science; Wahpeton
		NJ	Burlington County College; Pemberton
		NJ	Burlington County College; Pemberton
		NJ	Cumberland County College; Vineland
		NJ	Cumberland County College; Vineland
		NJ	Mercer County Community College; Trenton
		NJ	Mercer County Community College; Trenton
		NJ	Mercer County Community College; Trenton
		NJ	RCA Training and Placement Services, Monmouth County
		NJ	RCA Training and Placement Services, Monmouth County
		NJ	RCA Training and Placement Services, Monmouth County
	Petroleum	NM	Eastern New Mexico University, Roswell Campus
	Manufacturing	NM	New Mexico State University, Alamogordo
	Military	NM	New Mexico State University, Alamogordo
		NM	University of New Mexico, Los Alamos
		NY	Affirmative Action Programs
		NY	Affirmative Action Programs
		NY	Affirmative Action Programs
		NY	Affirmative Action Programs
		NY	Affirmative Action Programs
		NY	All-Craft Center; New York City
		NY	All-Craft Center; New York City
		NY	All-Craft Center; New York City
		NY	All-Craft Center; New York City
		NY	All-Craft Center; New York City
		NY	All-Craft Center; New York City
		NY	Career Training Center; New York City
		NY	Career Training Center; New York City
		NY	Career Training Center; New York City
		NY	Dutchess Community College; Poughkeepsie
		NY	Dutchess Community College; Poughkeepsie
		NY	Hudson Valley Community College; Troy
		NY	Hudson Valley Community College; Troy
		NY	Hudson Valley Community College; Troy

ALPHABETICAL LISTING OF COMPANIES BY EDUCATIONAL INSTITUTION

BUSINESS	TYPE	ST	INSTITUTION
		NY	Hudson Valley Community College; Troy
		NY	Hudson Valley Community College; Troy
		NY	Monroe Community College; Rochester
		NY	Onondaga Community College; Syracuse
		NY	Onondaga Community College; Syracuse
		NY	Onondaga Community College; Syracuse
		NY	Onondaga Community College; Syracuse
		OH	Cincinnati Technical College; Cincinnati
		OH	Cincinnati Technical College; Cincinnati
		OH	Cuyahoga Community College; Cleveland
		OH	Cuyahoga Community College; Cleveland
		OH	Lorain County Community College; Elyria
		OH	Lorain County Community College; Elyria
		OH	Lorain County Community College; Elyria
		OH	Muskingum Area Technical College; Zanesville
		OH	Ohio State University at Columbus
		OR	Central Oregon Community College; Bend
		OR	Central Oregon Community College; Bend
		OR	Chemeketa Junior College; Salem
		OR	Chemeketa Junior College; Salem
		OR	Chemeketa Junior College; Salem
		OR	Chemeketa Junior College; Salem
		OR	Chemeketa Junior College; Salem
		OR	Chemeketa Junior College; Salem
		OR	Clatsop Community College; Astoria
		OR	Lane Community College; Eugene
		OR	Linn-Benton Community College; Albany
		OR	Portland Community College; Portland
		OR	Portland Community College; Portland
		OR	Portland Community College; Portland
		OR	Portland Community College; Portland
		OR	Portland Community College; Portland
		OR	Rogue Community College; Grants Pass
		OR	Rogue Community College; Grants Pass
		OR	Rogue Community College; Grants Pass
		OR	Southwestern Oregon Community College; Coos Bay
		PA	Allentown, PA Business Council
		PA	Community College of Allegheny County; Pittsburgh
		PA	Four advanced technical centers
		PA	Northampton County Area Community College
		PA	Philadelphia High School Academies
		PA	SUN Area Vocational-Technical School; New Brunswick
		PA	Williamsport Area Community College; Williamsport
		PA	Williamsport Area Community College; Williamsport
		PA	Williamsport Area Community College; Williamsport
		PA	Williamsport Area Community College; Williamsport
		RI	Community College of Rhode Island; Warwick
		RI	Community College of Rhode Island; Warwick
		RI	Community College of Rhode Island; Warwick
		RI	Community College of Rhode Island; Warwick

BUSINESS	TYPE	ST	INSTITUTION
		RI	Community College of Rhode Island; Warwick
		RI	Roger Williams College; Bristol
		SC	Aiken Technical College; Aiken
		SC	Florence-Darlington Technical College; Florence
		SC	Orangeburg, Calhoun Technical College; Orangeburg
		SC	Spartanburg Technical College; Spartanburg
		SC	Tri-County Technical Center; Pendleton
		SC	Trident Technical Center; Charleston
		TN	Chattanooga State Technical Community College; Chattanooga
		TN	Chattanooga State Technical Community College; Chattanooga
		TN	Chattanooga State Technical Community College; Chattanooga
		TN	Chattanooga State Technical Community College; Chattanooga
		TN	Chattanooga State Technical Community College; Chattanooga
		TN	Chattanooga State Technical Community College; Chattanooga
		TN	Chattanooga State Technical Community College; Chattanooga
		TN	Chattanooga State Technical Community College; Chattanooga
		TN	Chattanooga State Technical Community College; Chattanooga
		TN	Chattanooga State Technical Community College; Chattanooga
		TN	Roane State Community College; Harriman
		TN	Roane State Community College; Harriman
		TN	Roane State Community College; Harriman
		TN	State Technical Institute at Memphis
	Marine industry	TX	Brazosport College; Lake Jackson
		TX	Brazosport College; Lake Jackson
	Fuels	TX	Lee College; Baytown
	Chemical	TX	Lee College; Baytown
	Rubber industry	TX	Lee College; Baytown
	Steel	TX	Lee College; Baytown
	Fuel industry	TX	Midland College; Midland
	Electronics	TX	Mountain View Community College; Dallas
		TX	Odessa College; Odessa
		TX	Odessa College; Odessa
		TX	Ranger Junior College; Ranger
		TX	Vernon Regional Junior College, North Texas Skills Center
	Mining	UT	College of Eastern Utah; Price
		UT	College of Eastern Utah; Price
		UT	College of Eastern Utah; Price
		UT	Uintah Basin Area Vocational Center; Roosevelt
		UT	Utah Technical College at Provo/Orem; Provo
	Utility	UT	Utah Technical College at Provo/Orem; Provo
		UT	Utah Technical College at Provo/Orem; Provo
		VA	Wytheville Community College; Wytheville
		VA	Wytheville Community College; Wytheville
		VA	Wytheville Community College; Wytheville
		VA	Wytheville Community College; Wytheville
		VA	Wytheville Community College; Wytheville
		VA	Wytheville Community College; Wytheville
		WA	Big Bend Community College; Moses Lake
		WA	Big Bend Community College; Moses Lake
		WA	Clover Park Vocational-Technical Institute; Tacoma

ALPHABETICAL LISTING OF COMPANIES BY EDUCATIONAL INSTITUTION

BUSINESS	TYPE	ST	INSTITUTION
		WA	Clover Park Vocational-Technical Institute; Tacoma
		WA	Clover Park Vocational-Technical Institute; Tacoma
		WA	Clover Park Vocational-Technical Institute; Tacoma
		WA	Clover Park Vocational-Technical Institute; Tacoma
		WA	Clover Park Vocational-Technical Institute; Tacoma
		WA	Columbia Basin College; Pasco
	Nuclear	WA	Columbia Basin College; Pasco
	Earth and rock drilling industry	WA	Edmonds Community College; Lynnwood
	Forest harvesting	WA	Edmonds Community College; Lynnwood
	Irrigation	WA	Walla Walla Community College; Walla Walla
		WI	Lakeshore Technical Institute; Cleveland
		WI	Milwaukee Area Technical College; Milwaukee
3M		SC	Greenville Technical College; Greenville
A celanese fiber plant	Celanese fiber plant	SC	York Technical College; Rock Hill
A digital equipment company	Electronics	GA	Dalton Junior College; Dalton
A local hospital	Health	LA	Delgado Community College; New Orleans
A major electronics industry	Electronics	FL	Santa Fe Community College; Gainesville
A major utilities department	Utility	FL	Santa Fe Community College; Gainesville
A national insurance company	Insurance	FL	Santa Fe Community College; Gainesville
A new manufacturing plant	Manufacturing	NC	Caldwell Community Technical Institute; Hudson
A telephone industry	Utility	ND	North Dakota School of Science; Wahpeton
A telephone system	Utility	LA	Delgado Community College; New Orleans
A. Copy America	Photocopy	NY	Nassau County schools
Acme Electric Corporation	Electrical	NC	Robeson Technical College; Lumberton
Alachua County Private Industry Council	Telephone	FL	Santa Fe Community College; Gainesville
Allegheny Copy Products, Inc.	Photocopy	NY	Nassau County schools
Allen Bradley Company	Computer graphics	WI	Milwaukee Area Technical College; Milwaukee
American Automobile Association		MI	Oakland Community College; Auburn Heights
American Hoechst		SC	Greenville Technical College; Greenville
American Society for Quality Control	Quality control	AZ	Glendale Community College; Glendale
Amphenol		NC	Durham Technical Institute; Durham
Arch Photocopy	Photocopy	NY	Westchester County schools
Associated Builders and Contractors		TX	Odessa College; Odessa
Associated Builders and Contractors	Construction	WY	Casper College; Casper
Atlantic Research		VA	Temple School; Bailey's Crossroads
B. F. Goodrich	Automotive, tires	SC	Kershaw County Area Vocational Center; Kershaw County
Bank of America	Financial	CA	Computer Training Center; San Diego
Bell Aerospace Textron	Aerospace	NY	Niagara County Community College; Niagara Falls
Brewer Company		MI	Alpena Community College; Alpena
Bethlehem Steel	Steel	MD	Dundalk Community College; Baltimore
Bethlehem Steel	Steel	PA	Vocational Technical School of Eastern Northampton County
Bunker Ramo Electronic Systems	Aerospace	CA	Los Angeles Community College district
California First Bank	Financial	CA	Computer Training Center; San Diego
Carboloy Systems	Alloy manufacture	TN	Tennessee Industrial Training Service; Nashville
Caterpillar Tractor Company	Manufacturing	IL	College of Lake County; Grayslake
Chevron	Fuels	CA	Unnamed High Schools
Cincinnati Milacron, Inc.	Machine tools, robotics	SC	Piedmont Technical Institute; Piedmont
Civil Air Patrol	Aircraft	PA	Williamsport Area Community College; Williamsport
Cleveland Electrical Company	Utility	OH	Lorain County Community College; Elyria
Coastal Training Services		VA	Temple School; Bailey's Crossroads

ALPHABETICAL LISTING OF COMPANIES BY EDUCATIONAL INSTITUTION

BUSINESS	TYPE	ST	INSTITUTION
Computer Technology Corporation	Electronics	TX	Austin Community College; Austin
Control Data Corporation	Electronics	IL	Triton College; River Grove
Control Data Corporation	Electronics	PA	Control Data Institute; Pittsburgh
Copley Press	Publishing	CA	Computer Training Center; San Diego
County Industrial Opportunity Committee		IL	College of Lake County; Grayslake
DRD Industries		TN	Tennessee Industrial Training Service; Nashville
Dallas Home and Apartment Builders Association		TX	North Lake College; Irving
Data General	Electronics	NC	Durham Technical Institute; Durham
Data Power	Electronics	CA	Los Angeles Community College district
Digital Equipment Corporation	Electronics	MA	Franklin Institute; Boston
Digital Equipment Corporation	Electronics	MD	Prince Georges Community College
Digital Equipment Corporation	Electronics	TN	Roane State Community College; Harriman
Dynamit	Silicon wafer manufacture	NC	Durham Technical Institute; Durham
Elliott Company, division of United Technologies	Electronics	PA	Elliott Training Center; Greensburg
Elsec Electronics	Electronics	CA	Los Angeles Community College district
Fire departments/districts	Fire service	NM	San Juan College; Farmington
Ford Motor Company	Automotive	MI	MaComb Community College; Warren
Ford Motor Company	Automotive	NY	Orange County Community College; Middleton
Fowler Motors	Automotive	PA	Williamsport Area Community College; Williamsport
Foxboro Company		RI	Community College of Rhode Island; Warwick
Frito-Lay		PA	Williamsport Area Community College; Williamsport
Garsmith Office Equipment, Inc.		NY	Nassau County schools
GE Microelectronics Facility	Electronics	NC	Durham Technical Institute; Durham
General Dynamics	Electronics	MI	MaComb Community College; Warren
General Dynamics, Electric Boat Division	Marine	RI	Community College of Rhode Island; Warwick
General Electric	Manufacturing	MA	North Shore Community College; Beverly
General Electric	Electronics	TN	Tennessee Industrial Training Service; Nashville
General Electric	Electronics	WI	Waukesha County Technical Institute; Pewaukee
General Electric Company	Electronics	SC	Greenville Technical College; Greenville
General Electric Company	Electronics	TN	Columbia State Community College; Columbia
General Motors	Automotive	IL	College of Lake County; Grayslake
General Motors	Automotive	IL	Triton College; River Grove
General Motors	Automotive	MI	MaComb Community College; Warren
General Motors	Automotive	MI	Oakland Community College; Auburn Heights
General Motors	Automotive	MO	Jefferson City local schools; Jefferson City
Gestetner Corporation		NY	Nassau County schools
Great Plains coal gasification plant	Utility	ND	Bismarck Junior College; Bismarck
GTE Sylvania, Inc.	Electronics	MA	North Shore Community College; Beverly
Health care providers	Health	RI	Community College of Rhode Island; Warwick
Hewlett Packard		NJ	Bergen County Vocational Technical School; Hackensack
Hewlett-Packard Company	Electronics	CA	Palomar Community College; San Marcos
Holmes and Narver	Electronics	CA	Los Angeles Community College district
Home Federal Savings and Loan	Financial	CA	Computer Training Center; [illegible]ego
Honeywell Information Systems	Electronics	MA	Regis College of Weston; Weston
Hughes Aircraft	Aerospace	CA	Los Angeles Community College district
Hughes Electron Dynamics Division	Aerospace	CA	Los Angeles Community College district
Hughes Missile Systems	Aerospace	CA	Los Angeles Community College district
Hughes Space Communications Division	Aerospace	CA	Los Angeles Community College district
IBM	Electronics	CA	Computer Training Center; San Diego
IBM	Electronics	NC	Durham Technical Institute; Durham

ALPHABETICAL LISTING OF COMPANIES BY EDUCATIONAL INSTITUTION

BUSINESS	TYPE	ST	INSTITUTION
IBM	Electonics	NJ	Bergen County Vocational Technical School; Hackensack
IBM	Electronics	NY	Affirmative Action Programs
IBM	Electronics	NY	Westchester County schools
IBM	Electronics	TX	Austin Community College; Austin
Ille Division of Market Forge		PA	Williamsport Area Community College; Williamsport
Indel Tool Corporation	Manufacturing	IL	Elgin Community College; Elgin
Inland Steel Company	Steel	IL	Rend Lake College; Ina
Intel Corporation	Computer chip manufacturing	OR	Portland Community College; Portland
International Association of Machinists	Union	OH	Cuyahoga Community College; Cleveland
International Union of Electrical Workers/N.E. District Council	Union	MA	North Shore Community College; Beverly
ITT	Utility	NY	Career Training Center; New York City
ITT Cannon	Electronics	CA	Los Angeles Community College district
J. P. Egan Company		NY	Nassau County schools
J. P. Stevens	Textile	SC	Greenville Technical College; Greenville
J. P. Ward Foundry		PA	Williamsport Area Community College; Williamsport
Keystone Steel and Wire	Manufacturing	IL	Illinois Central College
Kohler	Manufacturing	WI	Lakeshore Technical Institute; Cleveland
Lawrence Livermore National Laboratory	Electronics	CA	Diablo Valley College; Pleasant Hill
Litton Guidance and Control Systems	Aerospace	CA	Los Angeles Community College district
Local Airport Commission	Airport	AR	Phillips County Community College; Helena
Local health centers	Health	NM	Eastern New Mexico University, Roswell Campus
Local hospitals	Health services	IL	Kankakee Community College; Kankakee
Local hospitals	Health	WI	Mid-State Technical College; Marshfield
Local hospitals, nursing homes, and health-related facilities	Health	TN	Roane State Community College; Harriman
Lockheed	Electronics	TX	Austin Community College; Austin
Los Alamos Scientific Laboratories		NM	University of New Mexico, Los Alamos
Los Angeles Business Labor Council		CA	Los Angeles Community College district
Manhattan Center Advisory Council		NY	Manhattan Center for Science and Mathematics
Mansfield Area Growth Committee		OH	Ohio State University at Mansfield
Medical centers and hospitals	Health care	IL	City Colleges of Chicago, Chicago City-Wide College
Metropolitan Calculator Systems, Inc.		NY	Nassau County schools
Metropolitan Life Insurance Company	Insurance	RI	Community College of Rhode Island; Warwick
Microelectronics	Electronics	TX	Austin Community College; Austin
Mid-Willamette Valley Consortium		OR	Chemeketa Junior College; Salem
Minolta Business Systems		NY	Nassau County schools
Monongahela Power Company	Utility	WV	Fairmont State College; Fairmont
Monsanto Fibers and Instruments	Electronics/chemistry	FL	Pensacola Junior College; Pensacola
Montana Power Company	Utility	MT	Miles Community College; Miles City
National Cable TV Institute	Cable television	IL	Moraine Valley Community College; Palos Hills
National Society for Die Casting Engineers	Manufacturing	IL	Triton College; River Grove
National Tooling and Machinery Association	Union	RI	Community College of Rhode Island; Warwick
New Jersey Bell	Utility	NJ	Bergen County Vocational Technical School; Hackensack
Northeastern Office Equipment Company		NY	Nassau County schools
Northern Telecom		NC	Durham Technical Institute; Durham
Numerical Controlled Machining	Robotics	OH	Cuyahoga Community College; Cleveland
Old Ben Coal Company	Mining	IL	Rend Lake College; Ina
Operating Engineers Joint Apprenticeship Committee	Heavy equipment operators	UT	Utah Technical College at Provo/Orem; Provo
Otis Elevator		NJ	Bergen County Vocational Technical School; Hackensack
Pacific Bell	Utility	CA	Los Angeles Community College district
Paulsen Wire Rope		PA	Williamsport Area Community College; Williamsport

ALPHABETICAL LISTING OF COMPANIES BY EDUCATIONAL INSTITUTION

BUSINESS	TYPE	ST	INSTITUTION
Philip Morris		NC	Durham Technical Institute; Durham
Philip Morris USA		NC	Rowan Technical College; Salisbury
Pitney Bowes		NJ	Bergen County Vocational Technical School; Hackensack
Power plant	Utility	AZ	Northland Pioneer College; Holbrook
Powertec	Electronics	CA	Los Angeles Community College district
Pratt and Whitney Aircraft Group	Aircraft	CT	Manchester Community College; Manchester
Private Industry Council		AR	Phillips County Community College; Helena
Private Industry Council		IL	Technical Assistance Training Corporation; Chicago
Private Industry Council		NJ	Passaic County Community College; Patterson
Public Service Electric and Gas Company	Utility	NJ	Bergen County Vocational Technical School; Hackensack
Puritan Life Insurance Company	Insurance	RI	Community College of Rhode Island; Warwick
Quality Business Systems, Inc.		NY	Nassau County schools
Raytheon Company, Submarine Signal Division		RI	Community College of Rhode Island; Warwick
RCA		NJ	RCA Training and Placement Services, Monmouth County
Royal Office Systems, Inc.		NY	Nassau County schools
Regional Industrial-Technical Education Council		NY	Suffolk Community College; Selden
Rexroth Corporation	Manufacturing	PA	Bethlehem Area Vocational Technical School; Northampton County
RTR Business Products, Inc.		NY	Nassau County schools
Safeguard Engine Parts		TN	Tennessee Industrial Training Service; Nashville
Salem Hospital	Health	MA	North Shore Community College; Beverly
Savin Corporation		NY	Nassau County schools
Savin Corporation		NY	Westchester County schools
Sharp Manufacturing	Electronics	TN	Tennessee Industrial Training Service; Nashville
Snohomish County Public Utility District	Utility	WA	Edmonds Community College; Lynnwood
Society of Manufacturing Engineers		CA	Los Angeles Community College district
Solar energy companies	Energy	MI	Oakland Community College; Auburn Heights
Southwestern Cable TV Company	Cable television	CA	Southwestern Cable TV Training Center; San Diego
Sperry		NC	Durham Technical Institute; Durham
Star Manufacturing Company		OK	South Oklahoma City Junior College; Oklahoma City
Tandon Corporation	Electronics	CA	Los Angeles Community College district
Tennessee Valley Authority	Utility	NC	Mayland Technical College; Spruce Pine
Tennessee Valley Authority	Utility	TN	Chattanooga State Technical Community College; Chattanooga
Texas Instruments	Optics	TX	North Lake College; Irving
TOSHIBA	Electronics	TN	Tennessee Industrial Training Service; Nashville
Tracor Inc.		VA	Temple School; Bailey's Crossroads
Troxler Electronics	Electronics	NC	Durham Technical Institute; Durham
Tufts-New England Medical Center	Health	MA	Franklin Institute; Boston
Turningpoint, Inc.		MA	North Shore Community College; Beverly
U. S. Air Force	Military	TX	Vernon Regional Junior College, Sheppard Learning Center
U. S. Army Reserve School	Military	MI	Oakland Community College; Auburn Heights
U. S. Bancorp	Financial	OR	Rogue Community College; Grants Pass
U. S. Department of Defense	Military	IL	College of Lake County; Grayslake
U. S. Navy	Military	TN	State Technical Institute at Memphis
U. S. Steel Company, Lorain-Cuyahoga Works	Steel	OH	Lorain County Community College; Elyria
Union Carbide	Chemical	SC	Greenville Technical College; Greenville
Union Oil Company	Fuels	CO	Colorado Mountain College; Glenwood Springs
United Association of Plumbers and Steamfitters	Union	PA	Williamsport Area Community College; Williamsport
United Auto Workers	Union	MI	Macomb Community College; Warren
United New Jersey Bank	Banking	NJ	Bergen County Vocational Technical School; Hackensack
Varian-Beverly Division		MA	North Shore Community College; Beverly

ALPHABETICAL LISTING OF COMPANIES BY EDUCATIONAL INSTITUTION

BUSINESS	TYPE	ST	INSTITUTION
Volkswagen	Automotive	MI	McComb Community College; Warren
Volkswagen	Automotive	PA	Elliott Training Center; New Stanton
Wausau Hospital	Health	WI	North Central Technical Institute; Wausau
Western Electric		OK	South Oklahoma City Junior College; Oklahoma City
Xerox	Photocopy	NY	Westchester County schools

APPENDIX D

ALPHABETICAL LISTING OF INDUSTRY SERVED BY EDUCATIONAL INSTITUTIONS AND MAIN SUPPORT

ALPHABETICAL LISTING OF INDUSTRY SERVED BY EDUCATIONAL INSTITUTIONS AND MAIN SUPPORT

IND. SERVED	ST	INSTITUTION	MAIN SUPPORT
Aerospace	NY	Niagara County Community College; Niagara Falls	Bell Aerospace Textron
Aerospace (Apprenticeship)	CT	Manchester Community College; Manchester	Pratt and Whitney Aircraft Group
Aerospace (Disadvantaged)	CO	Community College of Denver, Red Rocks Campus; Golden	Consortium of agencies and an aircraft firm
Aerospace/Electronics	CA	Los Angeles Community College district	Los Angeles Business Labor Council
Aerospace/Electronics	CA	Orange County Colleges; Garden Grove	Technology Exchange Center
Aircraft/Maintenance	PA	Williamsport Area Community College; Williamsport	Civil Air Patrol
Auto services	WA	Clover Park Vocational-Technical Institute; Tacoma	School
Automotive	NY	Orange County Community College; Middleton	Ford Motor Company
Automotive	PA	Elliott Training Center; New Stanton	Volkswagen
Automotive (Retraining)	MO	Jefferson City local schools; Jefferson City	General Motors
Automotive (Upgrading/Retraining)	MI	McComb Community College; Warren	Ford Motor Company
Automotive (Upgrading/Retraining)	MI	McComb Community College; Warren	United Auto Workers
Automotive (Upgrading/Retraining)	MI	McComb Community College; Warren	Volkswagen
Automotive (Upgrading/Retraining)	MI	McComb Community College; Warren	General Motors
Automotive/Computers	IL	Triton College; River Grove	General Motors
Automotive/Maintenance	WA	Big Bend Community College; Moses Lake	Local industries
Automotive/Robotics	IL	College of Lake County; Grayslake	General Motors
Automotive/Robotics	MI	Oakland Community College; Auburn Heights	General Motors
Automotive/Tires	SC	Kershaw County Area Vocational Center; Kershaw County	B. F. Goodrich
Aviation	WA	Clover Park Vocational-Technical Institute; Tacoma	School
Broad industrial	AL	Calhoun Community College; Decatur	Center for Industrial Development
Chemical	SC	Greenville Technical College; Greenville	Local industries
Chemical	TX	Lee College; Baytown	Industry
Communications/Cable television	CA	Southwestern Cable TV Training Center; San Diego	Southwestern Cable TV Company
Communications/Cable television	IL	Moraine Valley Community College; Palos Hills	National Cable TV Institute
Communications/Electronics	CA	Los Angeles Community College district	Los Angeles Business Labor Council
Communications/Electronics	ND	North Dakota School of Science; Wahpeton	A telephone industry
Communications/Electronics (Disadvantaged)	NY	Career Training Center; New York City	ITT
Communications/Electronics and others	NJ	RCA Training and Placement Services, Monmouth County	RCA
Communications/Graphics	OH	Cuyahoga Community College; Cleveland	Industry
Construction	TX	Brazosport College; Lake Jackson	Local industry
Construction	TX	Odessa College; Odessa	Associated Builders and Contractors
Construction	WY	Casper College; Casper	Associated Builders and Contractors
Construction (Training for women)	NY	All-Craft Center; New York	Construction industry and others
Construction/Carpentry	TX	North Lake College; Irving	Dallas Home and Apartment Builders Association
Construction/Heavy equipment	PA	Williamsport Area Community College; Williamsport	Industry
Construction/Heavy equipment	UT	Utah Technical College at Provo/Orem; Provo	Operating Engineers Joint Apprenticeship Committee
Construction/Sheet metal (Upgrading)	OR	Lane Community College; Eugene	Sheet metal industry
Construction/Training	OR	Portland Community College; Portland	College/Local industry
Earth and rock drilling	WA	Edmonds Community College; Lynnwood	Local industry
Education/Technological update	SC	Spartanburg Technical College; Spartanburg	Industry
Electrical	MA	North Shore Community College; Beverly	International Union of Electrical Workers/N.E. District Council
Electronics	CA	El Camino College; Torrance	Local businesses
Electronics	CA	Palomar Community College; San Marcos	Hewlett-Packard Company
Electronics	MA	Bunker Hill Community College; Boston	A local business
Electronics	MA	North Shore Community College; Beverly	GTE Sylvania, Inc.
Electronics	NC	Durham Technical Institute; Durham	GE Microelectronics Facility
Electronics	TN	Columbia State Community College; Columbia	General Electric Company
Electronics	TN	Roane State Community College; Harriman	Digital Equipment Corporation
Electronics	TX	Austin Community College; Austin	IBM/Lockheed and others

ALPHABETICAL LISTING OF INDUSTRY SERVED BY EDUCATIONAL INSTITUTIONS AND MAIN SUPPORT

IND. SERVED	ST	INSTITUTION	MAIN SUPPORT
Electronics	WA	Clover Park Vocational-Technical Institute; Tacoma	School
Electronics (Company employees)	TX	Mountain View Community College; Dallas	A local electronics firm
Electronics (Dislocated workers)	NC	Durham Technical Institute; Durham	Central Piedmont Private Industry Council
Electronics (On-the-job training)	CO	Pikes Peak Community College; Colorado Springs	Industry
Electronics (Retraining)	PA	Control Data Institute; Pittsburgh	Control Data Corporation
Electronics (Retraining)	PA	Elliott Training Center; Greensburg	Elliott Company, division of United Technologies
Electronics (Training for deaf)	VA	Temple School; Bailey's Crossroads	Coastal Training Services
Electronics (Upgrade training)	FL	Santa Fe Community College; Gainesville	A major electronics industry
Electronics (Upgrading/Retraining)	MI	MaComb Community College; Warren	General Dynamics
Electronics/Advanced uses	CA	Los Angeles Community College district	Aerospace Consortium
Electronics/Chemistry	FL	Pensacola Junior College; Pensacola	Monsanto Fibers and Instruments
Electronics/Computer chip manufacturing	OR	Portland Community College; Portland	Intel Corporation
Electronics/Computer graphics	WI	Milwaukee Area Technical College; Milwaukee	Allen Bradley Company
Electronics/Computers	CA	Los Angeles Community College district	Los Angeles Business Labor Council
Electronics/Computers	GA	Dalton Junior College; Dalton	A digital equipment company and others
Electronics/Computers	IL	Black Hawk College East Campus; Kewanee	A local industry
Electronics/Computers	[illegible]	Joliet Community College and seven area High Schools	Local industry
Electronics/Computers	IL	Triton College; River Grove	Control Data Corporation
Electronics/Computers	MA	Franklin Institute; Boston	Digital Equipment Corporation
Electronics/Computers	MD	Dundalk Community College; Baltimore	Industry
Electronics/Computers	MD	Essex Community College; Baltimore	Industry
Electronics/Computers	MD	Prince Georges Community College	Digital Equipment Corporation
Electronics/Computers	OR	Chemeketa Junior College; Salem	Mid-Willamette Valley Consortium
Electronics/Computers	PA	SUN Area Vocational-Technical School; New Brunswick	Central Pennsylvania industries
Electronics/Computers	RI	Community College of Rhode Island; Warwick	State of Rhode Island
Electronics/Computers	TX	Ranger Junior College; Ranger	Local small businesses
Electronics/Computers	VA	Wytheville Community College; Wytheville	Five county area businesses and industries
Electronics/Computers	WI	Waukesha County Technical Institute; Pewaukee	General Electric
Electronics/Computers (Adult education)	MA	Regis College of Weston; Weston	Honeywell Information Systems
Electronics/Computers (Disadvantaged adults)	CA	Computer Training Center; San Diego	IBM and others
Electronics/Computers (Disadvantaged)	NY	Affirmative Action Programs (35 nation-wide locations)	IBM
Electronics/Computers (Upgrading)	NY	Hudson Valley Community College; Troy	Local industries
Electronics/Control systems	CA	Los Angeles Community College district	Aerospace Consortium
Electronics/Data processing	IL	City Colleges of Chicago, Chicago City-Wide College	Industry
Electronics/Electricity (Unemployed women)	NJ	Bergen County Vocational Technical School; Hackensack	Bergen County Private Industry Council
Electronics/Fabrication	OR	Linn-Benton Community College; Albany	Private business
Electronics/Irrigation	WA	Walla Walla Community College; Walla Walla	Local industry
Electronics/Lasers	NM	University of New Mexico, Los Alamos	Los Alamos Scientific Laboratories
Electronics/Office automation	CA	Orange County Colleges; Garden Grove	Technology Exchange Center
Electronics/Photocopying	NY	Nassau County schools	Quality Business Systems, Inc. and others
Electronics/Photocopying (Disadvantaged)	NY	Westchester County schools	Arch Photocopy and others
Electronics/Radio (Displaced homeworkers)	CA	Evergreen Valley; San Jose	Local manufacturers
Electronics/Robotics	CA	Los Angeles Community College district	Los Angeles Business Labor Council
Electronics/Robotics	PA	Community College of Allegheny County; Pittsburgh	Industry
Electronics/Silicon wafer manufacturing	NC	Durham Technical Institute; Durham	Dynamit
Electronics/Van microwave classroom	CA	Los Angeles Community College district	Los Angeles Business Labor Council
Electronics/Video	CA	Los Angeles Community College district	Los Angeles Business Labor Council
Electronics/Word processing (Disadvantaged)	IL	Technical Assistance Training Corporation; Chicago	Private Industry Council
Energy	CO	Community College of Denver, Red Rocks Campus; Golden	Consortium of agencies and an aircraft firm
Energy (Upgrade training)	CO	Colorado Mountain College; Glenwood Springs	Union Oil Company and others

ALPHABETICAL LISTING OF INDUSTRY SERVED BY EDUCATIONAL INSTITUTIONS AND MAIN SUPPORT

IND. SERVED	ST	INSTITUTION	MAIN SUPPORT
Energy/Coal technology	ND	Bismarck Junior College; Bismarck	Great Plains coal gasification plant
Energy/Fuels (Apprenticeship training)	LA	Delgado Community College; New Orleans	Industries
Energy/Nuclear	WA	Columbia Basin College; Pasco	College/Local nuclear industry
Energy/Oil	TX	Lee College; Baytown	Industry
Energy/Oil	TX	Midland College; Midland	Oil industry
Energy/Oil, gas	TX	Odessa College; Odessa	Local businesses and industries
Energy/Petroleum	NM	Eastern New Mexico University, Roswell Campus; Roswell	Industry
Energy/Solar	MI	Oakland Community College; Auburn Heights	Solar energy companies and others
Energy/Solar/Electricity/Others (Upgrading)	CO	Colorado Mountain College; Glenwood Springs	Various
Engineering	RI	Community College of Rhode Island; Warwick	Raytheon Company, Submarine Signal Division
Engineering technologies	RI	Roger Williams College; Bristol	U. S. Navy
Engineering technology	SC	Greenville Technical College; Greenville	Local industries
Financial/Data processing (Retraining)	OR	Rogue Community College; Grants Pass	U. S. Bancorp
Fire science	NM	San Juan College; Farmington	Fire departments/districts
Fire service training	UT	Utah Technical College at Provo/Orem; Provo	Industry/Three cities/USAF
Forest harvesting	WA	Edmonds Community College; Lynnwood	Local industry
Health	WA	Clover Park Vocational-Technical Institute; Tacoma	School
Health care	IL	City Colleges of Chicago, Chicago City-Wide College	Medical centers and hospitals
Health services	LA	Delgado Community College; New Orleans	A local hospital
Health services	MA	Franklin Institute; Boston	Tufts-New England Medical Center
Health services	MA	North Shore Community College; Beverly	Salem Hospital
Health services	NM	Eastern New Mexico University, Roswell Campus; Roswell	Local health centers
Health services	RI	Community College of Rhode Island; Warwick	Health care providers
Health services	TN	Roane State Community College; Harriman	Local hospitals/Nursing homes/Health-related facilities
Health services/Respiratory	WI	Mid-State Technical College; Marshfield	Local hospitals
Health/Dental	VA	Wytheville Community College; Wytheville	Five county area businesses and industries
Health/Radiological	IL	Kankakee Community College; Kankakee	Local hospitals
Health/Radiologics	WI	North Central Technical Institute; Wausau	Wausau Hospital
Industrial drafting	ID	Idaho State University; Pocatello	A local industry
Industrial engineering	OH	Muskingum Area Technical College; Zanesville	Industry
Industrial job searching	PC	Unnamed; Allentown	Allentown, PA Business Council
Industrial retraining	PA	Community College of Allegheny County; Pittsburgh	County
Industrial skills (Apprenticeships)	IL	College of Lake County; Grayslake	County Industrial Opportunity Committee
Industrial training	PA	Philadelphia High School Academies; Philadelphia	Local business
Industrial training	UT	Utah State Board of Regents; Salt Lake City	Six Utah Colleges/Industry
Industrial welding	PA	Williamsport Area Community College; Williamsport	Local industry
Instrumentation technology	RI	Community College of Rhode Island; Warwick	Foxboro Company
Insurance/Adjuster	MI	Oakland Community College; Auburn Heights	American Automobile Association
Insurance/Auto-Fire	FL	Santa Fe Community College; Gainesville	A national insurance company
Local industry (On-the-job training)	DE	Delaware Technical and Community College; Wilmington	Various
Manufacturing	CO	Community College of Denver, Red Rocks Campus; Golden	Consortium of agencies and an aircraft firm
Manufacturing	IA	Indian Hills Community College; Ottumwa	Local industry
Manufacturing	IL	Illinois Central College	Keystone Steel and Wire
Manufacturing	IL	Triton College; River Grove	National Society for Die Casting Engineers
Manufacturing	MO	Jefferson College; Hillsboro	A local industry
Manufacturing	MO	State Fair Community College; Sedalia	Local industries
Manufacturing	MS	Itawamba Junior College; Tupelo	Local industry
Manufacturing	NC	Caldwell Community Technical Institute; Hudson	A new local industry
Manufacturing	NC	Durham Technical Institute; Durham	Philip Morris and others
Manufacturing	NC	Rowan Technical College; Salisbury	Philip Morris USA

ALPHABETICAL LISTING OF INDUSTRY SERVED BY EDUCATIONAL INSTITUTIONS AND MAIN SUPPORT

IND. SERVED	ST	INSTITUTION	MAIN SUPPORT
Manufacturing	NC	Wake Technical College; Raleigh	Industry
Manufacturing	NY	Dutchess Community College; Poughkeepsie	Industry and others
Manufacturing	OK	South Oklahoma City Junior College; Oklahoma City	Star Manufacturing Company
Manufacturing	PA	Northampton County Area Community College	Local business and industry
Manufacturing	PA	Vocational Technical School of Eastern Northampton County	Local business and industry
Manufacturing (Apprentices)	IN	Indiana Vocational Technical College; Gary	Unions/Industry
Manufacturing (Apprenticeship)	GA	Bainbridge Junior College; Bainbridge	A local industry
Manufacturing (Faculty exchange)	SC	Orangeburg, Calhoun Technical College; Orangeburg	Industry
Manufacturing (Retraining)	MO	St. Louis Community College; St. Louis	Local businesses
Manufacturing (Upgrading)	NC	Forsythe Technical Institute; Winston-Salem	A local industry
Manufacturing/Computerized production	CA	Orange County Colleges; Garden Grove	Technology Exchange Center
Manufacturing/Computers	IL	Elgin Community College; Elgin	Indel Tool Corporation and others
Manufacturing/Computers	MA	North Shore Community College; Beverly	General Electric and others
Manufacturing/Construction equipment	MI	Alpena Community College; Alpena	Besser Company
Manufacturing/Control equipment	SC	Trident Technical Center; Charleston	Local industries
Manufacturing/Electronics	OK	South Oklahoma City Junior College; Oklahoma City	Western Electric
Manufacturing/Electronics	OR	Portland Community College; Portland	Local business
Manufacturing/Electronics	PA	Williamsport Area Community College; Williamsport	Local businesses and industries
Manufacturing/Electronics	SC	Greenville Technical College; Greenville	Local industries
Manufacturing/Electronics	TN	Tennessee Industrial Training Service; Nashville	Various local industries
Manufacturing/Electronics (Apprenticeships)	RI	Community College of Rhode Island; Warwick	Industry
Manufacturing/Electronics/Computers	CA	Diablo Valley College; Pleasant Hill	Diablo Valley Enterprises/Lawrence Livermore National Laboratory
Manufacturing/Hydraulics	PA	Bethlehem Area Vocational Technical School; Northampton County	Rexroth Corporation/Bethlehem Steel
Manufacturing/Industrial mechanics	OR	Central Oregon Community College; Bend	Industry
Manufacturing/Industrial training	TN	Chattanooga State Technical Community College; Chattanooga	Industry
Manufacturing/Machine operators	NC	Central Carolina Technical College; Sanford	A new business
Manufacturing/Machine shop	SC	Florence-Darlington Technical College; Florence	Local industry
Manufacturing/Machine shop (Apprenticeships)	NJ	Cumberland County College; Vineland	Industry
Manufacturing/Machine tool technology	NJ	Passaic County Community College; Patterson	Private Industry Council
Manufacturing/Machine tool technology	NM	New Mexico State University, Alamogordo	A national corporation and others
Manufacturing/Machine tools/Robotics (Teach. trng)	SC	Piedmont Technical Institute; Piedmont	Cincinnati Milacron, Inc.
Manufacturing/Machining	OH	Cuyahoga Community College; Cleveland	Industry
Manufacturing/Machinists	RI	Community College of Rhode Island; Warwick	National Tooling and Machining Association
Manufacturing/Maintenance	WI	Lakeshore Technical Institute; Cleveland	Kohler Company
Manufacturing/Robotics	IL	College of Lake County; Grayslake	Caterpillar Tractor Company
Manufacturing/Technical training	OR	Lane Community College; Eugene	Oregon Small Business Development Center
Manufacturing/Technological training (Upgrading)	TN	Chattanooga State Technical Community College; Chattanooga	Industry
Manufacturing/Textiles	SC	Greenville Technical College; Greenville	Local industries
Manufacturing/Textiles	SC	York Technical College; Rock Hill	A celanese fiber plant
Manufacturing/Training	OR	Chemeketa Junior College; Salem	Mid-Willamette Valley Consortium
Manufacturing/Training (Upgrading)	OR	Southwestern Oregon Community College; Coos Bay	Industry
Manufacturing/Various	MI	Kalamazoo Valley Community College; Kalamazoo	Local industry
Manufacturing/Welding	ID	Idaho State University; Pocatello	Local industries
Marine	NC	Cape Fear Technical Institute; Wilmington	Local industries
Marine	RI	Community College of Rhode Island; Warwick	General Dynamics, Electric Boat Division
Marine	TX	Brazosport College; Lake Jackson	Local industry
Marine architecture	NJ	Burlington County College; Pemberton	Industry
Marine/Fishing vessels	OR	Clatsop Community College; Astoria	Oregon State University
Military	IL	College of Lake County; Grayslake	U. S. Department of Defense
Military	MI	Oakland Community College; Auburn Heights	U. S. Army Reserve School

ALPHABETICAL LISTING OF INDUSTRY SERVED BY EDUCATIONAL INSTITUTIONS AND MAIN SUPPORT

IND. SERVED	ST	INSTITUTION	MAIN SUPPORT
Military	TN	State Technical Institute at Memphis; Memphis	U. S. Navy
Military/Applied science	TX	Vernon Regional Junior College; Sheppard AFB	Sheppard Learning Center (USAF)
Mining	IL	Rend Lake College; Ina	Old Ben Coal Company
Mining	UT	College of Eastern Utah; Price	Industry
Mining/Petroleum	UT	Uintah Basin Area Vocational Center; Roosevelt	State of Utah
Optics	NY	Monroe Community College; Rochester	Local business
Optics	TX	North Lake College; Irving	Texas Instruments
Optics/Laser	OH	Cincinnati Technical College; Cincinnati	Various
Quality control	AZ	Glendale Community College; Glendale	American Society for Quality Control
Rubber	TX	Lee College; Baytown	Industry
Servicing/Office machines	OR	Central Oregon Community College; Bend	Industry
Steel	IL	Rend Lake College; Ina	Inland Steel Company
Steel	MD	Dundalk Community College; Baltimore	Bethlehem Steel
Steel	TX	Lee College; Baytown	Industry
Steel (Apprenticeship training)	OH	Lorain County Community College; Elyria	U. S. Steel Company, Lorain-Cuyahoga Works
Technical training (Faculty)	WI	Lakeshore Technical Institute; Cleveland	A local company
Transportation/Aircraft/Maintenance	AR	Phillips County Community College; Helena	Local Airport Commission
Unions	NJ	Mercer County Community College; Trenton	Local business
Utility	OH	Lorain County Community College; Elyria	Cleveland Electrical Company
Utility/Communications	CA	Los Angeles Community College district	Los Angeles Business Labor Council
Utility/Data processing	WV	Fairmont State College; Fairmont	Monongahela Power Company
Utility/Distribution	UT	Utah Technical College at Provo/Orem; Provo	Utility companies/Municipalities
Utility/Electrical generation	AZ	Northland Pioneer College; Holbrook	Power plant/Salt River Project
Utility/Electrical generation	NC	Robeson Technical College; Lumberton	Acme Electric Corporation
Utility/Electrical generation (Apprenticeship)	MT	Miles Community College; Miles City	Montana Power Company
Utility/Energy utilization	WA	Edmonds Community College; Lynwood	Snohomish County Public Utility District/College
Utility/Nuclear	TN	Chattanooga State Technical Community College; Chattanooga	Tennessee Valley Authority
Utility/Power generation	FL	Santa Fe Community College; Gainesville	A major utility
Utility/Solar energy	NC	Mayland Technical College; Spruce Pine	Tennessee Valley Authority
Utility/Telephone electronics	LA	Delgado Community College; New Orleans	A telephone system
Utility/Telephone/Cable TV	FL	Santa Fe Community College; Gainesville	Alachua County Private Industry Council
Various	CO	Northeastern Junior College; Sterling	Industry
Various	GA	The State of Georgia	Various/"Quick Start"
Various	IL	College of DuPage; Glen Ellyn	Industry
Various	IL	John Wood Community College; Quincy	Industry
Various	MI	Bay de Noc Community College; Escanaba	Fifty-four local firms
Various	MO	Northeast Missouri State University; Kirksville	Local industry
Various	NY	Onondaga Community College; Syracuse	Various
Various	NY	Suffolk Community College; Selden	Regional Industrial-Technical Education Council
Various	OH	Ohio State University at Columbus	Ohio Technical Transfer Organization
Various	OH	Ohio State University at Mansfield	Mansfield Area Growth Committee
Various	SC	Tri-County Technical Center; Pendleton	Industries
Various	TN	State Technical Institute at Memphis; Memphis	Local businesses and industries
Various	TX	Vernon Regional Junior College; Wichita Falls	North Texas Skills Center
Various	WI	Milwaukee Area Technical College; Milwaukee	Industry/Professional groups
Various (Apprentices)	AZ	Rio Salado Community College; Phoenix	College/Local businesses
Various (Apprenticeship training)	IL	Moraine Valley Community College; Palos Hills	Local industries
Various (Displaced)	IA	Community College, Drake Univ., National Institute of Technology	City of Des Moines
Various (Faculty retraining)	MD	Hagerstown Junior College; Hagerstown	Industry
Various (Faculty updating)	NC	Central Piedmont Community College; Charlotte	Industry

ALPHABETICAL LISTING OF INDUSTRY SERVED BY EDUCATIONAL INSTITUTIONS AND MAIN SUPPORT

IND. SERVED	ST	INSTITUTION	MAIN SUPPORT
Various (Local minorities)	CA	Unnamed High Schools	Chevron and others
Various (Retraining)	MA	Greater Lowell Regional Vocational Technical School; Lowell	Local industries
Various (Retraining)	ME	Training Resource Center; Cumberland County	Various
Various (Training)	NC	Asheville-Buncombe Technical College; Asheville	Industry
Various (Upgrading)	IL	Prairie State College; Chicago Heights	Local businesses
Various (Upgrading)	ME	University of Maine at Augusta	Various
Various (Upgrading)	NC	Pitt Community College; Greenville	Industry
Various technologies (Retraining)	PA	Four advanced technical centers	State-wide businesses and industries
Various/Mobile training program	ND	North Dakota School of Science; Wahpeton	Industries
Various/Technology-oriented (High school level)	NY	Manhattan Center for Science and Mathematics; New York City	Manhattan Center Advisory Council
Welding	AR	Phillips County Community College; Helena	Private Industry Council
Welding	SC	Aiken Technical College; Aiken	Local industry
Welding	WA	Columbia Basin College; Pasco	Local industry

APPENDIX E

ALPHABETICAL LISTING OF EDUCATIONAL INSTITUTIONS AND TYPES OF IDENTIFIED TRAINING ARRANGEMENTS

ALPHABETICAL LISTING OF EDUCATIONAL INSTITUTIONS AND TYPES OF IDENTIFIED TRAINING ARRANGEMENTS

ST	INSTITUTION	PROGRAM TYPE
AL	Calhoun Community College; Decatur	Customized
AL	Calhoun Community College; Decatur	Sharing resources
AR	Phillips County Community College; Helena	
AR	Phillips County Community College; Helena	Cooperative
AR	Phillips County Community College; Helena	Sharing resources
AZ	Glendale Community College; Glendale	Sharing resources
AZ	Northland Pioneer College; Holbrook	Cooperative
AZ	Northland Pioneer College; Holbrook	Customized courses
AZ	Rio Salado Community College; Phoenix	Apprenticeship
AZ	Rio Salado Community College; Phoenix	Cooperative
CA	Computer Training Center; San Diego	
CA	Computer Training Center; San Diego	
CA	Computer Training Center; San Diego	
CA	Computer Training Center; San Diego	
CA	Computer Training Center; San Diego	Cooperative
CA	Diablo Valley College; Pleasant Hill	Cooperative
CA	El Camino College; Torrance	Sharing resources
CA	Evergreen Valley; San Jose	
CA	Los Angeles Community College district	
CA	Los Angeles Community College district	
CA	Los Angeles Community College district	
CA	Los Angeles Community College district	
CA	Los Angeles Community College district	
CA	Los Angeles Community College district	
CA	Los Angeles Community College district	
CA	Los Angeles Community College district	
CA	Los Angeles Community College district	
CA	Los Angeles Community College district	
CA	Los Angeles Community College district	
CA	Los Angeles Community College district	
CA	Los Angeles Community College district	
CA	Los Angeles Community College district	Cooperative
CA	Los Angeles Community College district	Customized courses
CA	Orange County Colleges; Garden Grove	
CA	Orange County Colleges; Garden Grove	Cooperative
CA	Palomar Community College; San Marcos	
CA	Palomar Community College; San Marcos	Cooperative
CA	Southwestern Cable TV Training Center; San Diego	Contract
CA	Unnamed High Schools	Cooperative
CO	Colorado Mountain College; Glenwood Springs	
CO	Colorado Mountain College; Glenwood Springs	
CO	Colorado Mountain College; Glenwood Springs	
CO	Colorado Mountain College; Glenwood Springs	
CO	Colorado Mountain College; Glenwood Springs	
CO	Colorado Mountain College; Glenwood Springs	Cooperative
CO	Community College of Denver, Red Rocks Campus; Golden	
CO	Community College of Denver, Red Rocks Campus; Golden	
CO	Community College of Denver, Red Rocks Campus; Golden	
CO	Community College of Denver, Red Rocks Campus; Golden	
CO	Community College of Denver, Red Rocks Campus; Golden	Sharing resources

ALPHABETICAL LISTING OF EDUCATIONAL INSTITUTIONS AND TYPES OF IDENTIFIED TRAINING ARRANGEMENTS

ST	INSTITUTION	PROGRAM TYPE
CO	Northeastern Junior College; Sterling	Cooperative
CO	Pikes Peak Community College; Colorado Springs	Sharing resources
CT	Manchester Community College; Manchester	
CT	Manchester Community College; Manchester	
CT	Manchester Community College; Manchester	Apprenticeship
DE	Delaware Technical and Community College; Wilmington	
DE	Delaware Technical and Community College; Wilmington	Cooperative
FL	Pensacola Junior College; Pensacola	
FL	Pensacola Junior College; Pensacola	
FL	Pensacola Junior College; Pensacola	
FL	Pensacola Junior College; Pensacola	
FL	Pensacola Junior College; Pensacola	Sharing resources
FL	Santa Fe Community College; Gainsville	
FL	Santa Fe Community College; Gainsville	
FL	Santa Fe Community College; Gainsville	
FL	Santa Fe Community College; Gainsville	
FL	Santa Fe Community College; Gainsville	
FL	Santa Fe Community College; Gainsville	Cooperative
FL	Santa Fe Community College; Gainsville	Sharing resources
GA	Bainbridge Junior College; Bainbridge	Apprenticeship
GA	Bainbridge Junior College; Bainbridge	Sharing resources
GA	Dalton Junior College; Dalton	Cooperative
GA	Dalton Junior College; Dalton	Sharing resources
GA	The State of Georgia	Contract
IA	Community College, Drake Univ., National Institute of Technology	Customized
IA	Indian Hills Community College; Ottumwa	
IA	Indian Hills Community College; Ottumwa	
IA	Indian Hills Community College; Ottumwa	Cooperative
ID	Idaho State University; Pocatello	
ID	Idaho State University; Pocatello	
ID	Idaho State University; Pocatello	Cooperative
ID	Idaho State University; Pocatello	Sharing resources
IL	Black Hawk College East Campus; Kewanee	Sharing resources
IL	City Colleges of Chicago, Chicago City-Wide College	
IL	City Colleges of Chicago, Chicago City-Wide College	
IL	City Colleges of Chicago, Chicago City-Wide College	Cooperative
IL	City Colleges of Chicago, Chicago City-Wide College	Sharing resources
IL	College of DuPage; Glen Ellyn	
IL	College of DuPage; Glen Ellyn	
IL	College of DuPage; Glen Ellyn	
IL	College of DuPage; Glen Ellyn	
IL	College of DuPage; Glen Ellyn	
IL	College of DuPage; Glen Ellyn	
IL	College of DuPage; Glen Ellyn	
IL	College of DuPage; Glen Ellyn	
IL	College of DuPage; Glen Ellyn	Contract
IL	College of Lake County; Grayslake	
IL	College of Lake County; Grayslake	Apprenticeship
IL	College of Lake County; Grayslake	Cooperative
IL	College of Lake County; Grayslake	Sharing resources

ALPHABETICAL LISTING OF EDUCATIONAL INSTITUTIONS AND TYPES OF IDENTIFIED TRAINING ARRANGEMENTS

ST	INSTITUTION	PROGRAM TYPE
IL	Elgin Community College; Elgin	Cooperative
IL	Illinois Central College	Cooperative
IL	John Wood Community College; Quincy	Contract
IL	Joliet Community College and seven area High Schools	Cooperative
IL	Kankakee Community College; Kankakee	Cooperative
IL	Moraine Valley Community College; Palos Hills	Apprenticeship
IL	Moraine Valley Community College; Palos Hills	Cooperative
IL	Prairie State College; Chicago Heights	Contract
IL	Rend Lake College; Ina	
IL	Rend Lake College; Ina	Cooperative
IL	Technical Assistance Training Corporation; Chicago	Cooperative
IL	Triton College; River Grove	Apprenticeship
IL	Triton College; River Grove	Cooperative
IL	Triton College; River Grove	Customized
IL	Triton College; River Grove	Sharing resources
IN	Indiana Vocational Technical College; Gary	
IN	Indiana Vocational Technical College; Gary	Cooperative
IN	Indiana Vocational Technical College; Gary	Sharing resources
LA	Delagado Community College; New Orleans	
LA	Delagado Community College; New Orleans	
LA	Delagado Community College; New Orleans	
LA	Delagado Community College; New Orleans	
LA	Delagado Community College; New Orleans	Apprenticeship
LA	Delagado Community College; New Orleans	Cooperative
LA	Delagado Community College; New Orleans	Sharing resources
MA	Bunker Hill Community College; Boston	Cooperative
MA	Bunker Hill Community College; Boston	Sharing resources
MA	Franklin Institute; Boston	Contract
MA	Franklin Institute; Boston	Customized
MA	Greater Lowell Regional Vocational Technical School; Lowell	Cooperative
MA	North Shore Community College; Beverly	
MA	North Shore Community College; Beverly	
MA	North Shore Community College; Beverly	
MA	North Shore Community College; Beverly	
MA	North Shore Community College; Beverly	Contract
MA	North Shore Community College; Beverly	Cooperative
MA	Regis College of Weston; Weston	Cooperative
MD	Dundalk Community College; Baltimore	
MD	Dundalk Community College; Baltimore	Cooperative
MD	Dundalk Community College; Baltimore	Customized courses
MD	Essex Community College; Baltimore	
MD	Essex Community College; Baltimore	Cooperative
MD	Hagerstown Junior College; Hagerstown	Customized courses
MD	Prince Georges Community College	Contract
ME	Training Resource Center; Cumberland County	Cooperative
ME	Training Resource Center; Cumberland County	Customized courses
ME	University of Maine at Augusta	Contract
MI	Alpena Community College; Alpena	Cooperative
MI	Bay de Noc Community College; Escanaba	Contract
MI	Kalamazoo Valley Community College; Kalamazoo	

ALPHABETICAL LISTING OF EDUCATIONAL INSTITUTIONS AND TYPES OF IDENTIFIED TRAINING ARRANGEMENTS

ST	INSTITUTION	PROGRAM TYPE
MI	Kalamazoo Valley Community College; Kalamazoo	
MI	Kalamazoo Valley Community College; Kalamazoo	
MI	Kalamazoo Valley Community College; Kalamazoo	
MI	Kalamazoo Valley Community College; Kalamazoo	
MI	Kalamazoo Valley Community College; Kalamazoo	
MI	Kalamazoo Valley Community College; Kalamazoo	
MI	Kalamazoo Valley Community College; Kalamazoo	Apprenticeship
MI	Kalamazoo Valley Community College; Kalamazoo	Contract
MI	MaComb Community College; Warren	
MI	MaComb Community College; Warren	
MI	MaComb Community College; Warren	
MI	MaComb Community College; Warren	Cooperative
MI	MaComb Community College; Warren	Customized courses
MI	Oakland Community College; Auburn Heights	
MI	Oakland Community College; Auburn Heights	
MI	Oakland Community College; Auburn Heights	
MI	Oakland Community College; Auburn Heights	
MI	Oakland Community College; Auburn Heights	Cooperative
MO	Jefferson City local schools; Jefferson City	Cooperative
MO	Jefferson College; Hillsboro	Cooperative
MO	Jefferson College; Hillsboro	Sharing resources
MO	Northeast Missouri State University; Kirksville	Cooperative
MO	Northeast Missouri State University; Kirksville	Sharing resources
MO	St. Louis Community College; St. Louis	Cooperative
MO	State Fair Community College; Sedalia	Cooperative
MS	Itawamba Junior College; Tupelo	Cooperative
MT	Miles Community College; Miles City	
MT	Miles Community College; Miles City	Cooperative
MT	Miles Community College; Miles City	Sharing resources
NC	Asheville-Buncombe Technical College; Asheville	Sharing resources
NC	Caldwell Community Technical Institute; Hudson	
NC	Caldwell Community Technical Institute; Hudson	Cooperative
NC	Cape Fear Technical Institute; Wilmington	Sharing resources
NC	Central Carolina Technical College; Sanford	Cooperative
NC	Central Piedmont Community College; Charlotte	Cooperative
NC	Durham Technical Institute; Durham	
NC	Durham Technical Institute; Durham	
NC	Durham Technical Institute; Durham	
NC	Durham Technical Institute; Durham	
NC	Durham Technical Institute; Durham	
NC	Durham Technical Institute; Durham	Apprenticeship
NC	Durham Technical Institute; Durham	Contract
NC	Durham Technical Institute; Durham	Cooperative
NC	Durham Technical Institute; Durham	Sharing resources
NC	Forsythe Technical Institute; Winston-Salem	Cooperative
NC	Mayland Technical College; Spruce Pine	Cooperative
NC	Pitt Community College; Greenville	Cooperative
NC	Robeson Technical College; Lumberton	Cooperative
NC	Rowan Technical College; Salisbury	Cooperative
NC	Wake Technical College; Raleigh	Sharing resources

ALPHABETICAL LISTING OF EDUCATIONAL INSTITUTIONS AND TYPES OF IDENTIFIED TRAINING ARRANGEMENTS

ST	INSTITUTION	PROGRAM TYPE
NY	Duchess Community College; Poughkeepsie	Cooperative
NY	Duchess Community College; Poughkeepsie	Sharing resources
NY	Hudson Valley Community College; Troy	
NY	Hudson Valley Community College; Troy	
NY	Hudson Valley Community College; Troy	
NY	Hudson Valley Community College; Troy	
NY	Hudson Valley Community College; Troy	Cooperative
NY	Manhattan Center for Science and Mathematics	
NY	Monroe Community College; Rochester	Cooperative
NY	Nassau County schools	
NY	Nassau County schools	
NY	Nassau County schools	
NY	Nassau County schools	
NY	Nassau County schools	
NY	Nassau County schools	
NY	Nassau County schools	
NY	Nassau County schools	
NY	Nassau County schools	
NY	Nassau County schools	
NY	Nassau County schools	Contract
NY	Nassau County schools	Customized courses
NY	Niagara County Community College; Niagara Falls	Sharing resources
NY	Onondaga Community College; Syracuse	
NY	Onondaga Community College; Syracuse	
NY	Onondaga Community College; Syracuse	
NY	Onondaga Community College; Syracuse	Sharing resources
NY	Orange County Community College; Middleton	Cooperative
NY	Suffolk Community College; Selden	Cooperative
NY	Westchester County schools	
NY	Westchester County schools	
NY	Westchester County schools	
NY	Westchester County schools	Cooperative
OH	Cincinnati Technical College; Cincinnati	
OH	Cincinnati Technical College; Cincinnati	Cooperative
OH	Cuyahoga Community College; Cleveland	
OH	Cuyahoga Community College; Cleveland	
OH	Cuyahoga Community College; Cleveland	Cooperative
OH	Cuyahoga Community College; Cleveland	Sharing resources
OH	Lorain County Community College; Elyria	
OH	Lorain County Community College; Elyria	
OH	Lorain County Community College; Elyria	Apprenticeship
OH	Lorain County Community College; Elyria	Cooperative
OH	Lorain County Community College; Elyria	Customized courses
OH	Muskingum Area Technical College; Zanesville	Cooperative
OH	Ohio State University at Columbus	Cooperative
OH	Ohio State University at Mansfield	Cooperative
OK	South Oklahoma City Junior College; Oklahoma City	
OK	South Oklahoma City Junior College; Oklahoma City	Customized
OR	Central Oregon Community College; Bend	
OR	Central Oregon Community College; Bend	Sharing resources

ALPHABETICAL LISTING OF EDUCATIONAL INSTITUTIONS AND TYPES OF IDENTIFIED TRAINING ARRANGEMENTS

ST	INSTITUTION	PROGRAM TYPE
ND	Bismarck Junior College; Bismarck	Cooperative
ND	North Dakota School of Science; Wahpeton	
ND	North Dakota School of Science; Wahpeton	
ND	North Dakota School of Science; Wahpeton	
ND	North Dakota School of Science; Wahpeton	
ND	North Dakota School of Science; Wahpeton	
ND	North Dakota School of Science; Wahpeton	Contract
ND	North Dakota School of Science; Wahpeton	Cooperative
NJ	Bergen County Vocational Technical School; Hackensack	
NJ	Bergen County Vocational Technical School; Hackensack	
NJ	Bergen County Vocational Technical School; Hackensack	
NJ	Bergen County Vocational Technical School; Hackensack	
NJ	Bergen County Vocational Technical School; Hackensack	
NJ	Bergen County Vocational Technical School; Hackensack	
NJ	Bergen County Vocational Technical School; Hackensack	Cooperative for women
NJ	Burlington County College; Pemberton	Customized courses
NJ	Burlington County College; Pemberton	Sharing resources
NJ	Cumberland County College; Vineland	
NJ	Cumberland County College; Vineland	Customized courses
NJ	Mercer County Community College; Trenton	
NJ	Mercer County Community College; Trenton	Contract
NJ	Mercer County Community College; Trenton	Cooperative
NJ	Passaic County Community College; Patterson	Cooperative
NJ	RCA Training and Placement Services, Monmouth County	
NJ	RCA Training and Placement Services, Monmouth County	
NJ	RCA Training and Placement Services, Monmouth County	
NJ	RCA Training and Placement Services, Monmouth County	Contract
NM	Eastern New Mexico University, Roswell Campus	
NM	Eastern New Mexico University, Roswell Campus	Sharing resources
NM	New Mexico State University, Alamogordo	
NM	New Mexico State University, Alamogordo	Sharing resources
NM	San Juan College; Farmington	Sharing resources
NM	University of New Mexico, Los Alamos	Cooperative
NM	University of New Mexico, Los Alamos	Sharing resources
NY	Affirmative Action Programs	
NY	Affirmative Action Programs	
NY	Affirmative Action Programs	
NY	Affirmative Action Programs	
NY	Affirmative Action Programs	Cooperative
NY	Affirmative Action Programs	Customized courses
NY	All-Craft Center; New York City	
NY	All-Craft Center; New York City	
NY	All-Craft Center; New York City	
NY	All-Craft Center; New York City	
NY	All-Craft Center; New York City	
NY	All-Craft Center; New York City	Customized courses
NY	Career Training Center; New York City	
NY	Career Training Center; New York City	
NY	Career Training Center; New York City	
NY	Career Training Center; New York City	Contract

ST	INSTITUTION	PROGRAM TYPE
OR	Chemeketa Junior College; Salem	
OR	Chemeketa Junior College; Salem	
OR	Chemeketa Junior College; Salem	
OR	Chemeketa Junior College; Salem	
OR	Chemeketa Junior College; Salem	
OR	Chemeketa Junior College; Salem	
OR	Chemeketa Junior College; Salem	Cooperative
OR	Clatsop Community College; Astoria	Cooperative
OR	Lane Community College; Eugene	Cooperative
OR	Linn-Benton Community College; Albany	Sharing resources
OR	Portland Community College; Portland	
OR	Portland Community College; Portland	
OR	Portland Community College; Portland	
OR	Portland Community College; Portland	Contract
OR	Portland Community College; Portland	Cooperative
OR	Portland Community College; Portland	Customized courses
OR	Rogue Community College; Grants Pass	
OR	Rogue Community College; Grants Pass	
OR	Rogue Community College; Grants Pass	
OR	Rogue Community College; Grants Pass	Cooperative
OR	Southwestern Oregon Community College; Coos Bay	Cooperative
PA	Allentown, PA Business Council	Cooperative
PA	Bethlehem Area Vocational Technical School; Northampton County	Cooperative
PA	Community College of Allegheny County; Pittsburgh	Cooperative
PA	Control Data Institute; Pittsburgh	
PA	Elliott Training Center; Greensburg	
PA	Elliott Training Center; New Stanton	
PA	Four advanced technical centers	Cooperative
PA	Northampton County Area Community College	
PA	Philadelphia High School Academies	Cooperative
PA	SUN Area Vocational-Technical School; New Brunswick	Cooperative
PA	Vocational Technical School of Eastern Northampton County	Sharing resources
PA	Williamsport Area Community College; Williamsport	
PA	Williamsport Area Community College; Williamsport	
PA	Williamsport Area Community College; Williamsport	
PA	Williamsport Area Community College; Williamsport	
PA	Williamsport Area Community College; Williamsport	
PA	Williamsport Area Community College; Williamsport	
PA	Williamsport Area Community College; Williamsport	
PA	Williamsport Area Community College; Williamsport	
PA	Williamsport Area Community College; Williamsport	Contract
PA	Williamsport Area Community College; Williamsport	Cooperative
PA	Williamsport Area Community College; Williamsport	Sharing resources
RI	Community College of Rhode Island; Warwick	
RI	Community College of Rhode Island; Warwick	
RI	Community College of Rhode Island; Warwick	
RI	Community College of Rhode Island; Warwick	
RI	Community College of Rhode Island; Warwick	
RI	Community College of Rhode Island; Warwick	
RI	Community College of Rhode Island; Warwick	

ALPHABETICAL LISTING OF EDUCATIONAL INSTITUTIONS AND TYPES OF IDENTIFIED TRAINING ARRANGEMENTS

ST	INSTITUTION	PROGRAM TYPE
RI	Community College of Rhode Island; Warwick	
RI	Community College of Rhode Island; Warwick	
RI	Community College of Rhode Island; Warwick	Apprenticeship
RI	Community College of Rhode Island; Warwick	Cooperative
RI	Community College of Rhode Island; Warwick	Sharing resources
RI	Roger Williams College; Bristol	Cooperative
SC	Aiken Technical College; Aiken	Sharing resources
SC	Florence-Darlington Technical College; Florence	Cooperative
SC	Greenville Technical College; Greenville	
SC	Greenville Technical College; Greenville	
SC	Greenville Technical College; Greenville	
SC	Greenville Technical College; Greenville	
SC	Greenville Technical College; Greenville	Cooperative
SC	Kershaw County Area Vocational Center; Kershaw County	Sharing resources
SC	Orangeburg, Calhoun Technical College; Orangeburg	Cooperative
SC	Piedmont Technical Institute; Piedmont	Sharing resources
SC	Spartanburg Technical College; Spartanburg	Cooperative
SC	Tri-County Technical Center; Pendleton	Cooperative
SC	Trident Technical Center; Charleston	Sharing resources
SC	York Technical College; Rock Hill	Sharing resources
TN	Chattanooga State Technical Community College; Chattanooga	
TN	Chattanooga State Technical Community College; Chattanooga	
TN	Chattanooga State Technical Community College; Chattanooga	
TN	Chattanooga State Technical Community College; Chattanooga	
TN	Chattanooga State Technical Community College; Chattanooga	
TN	Chattanooga State Technical Community College; Chattanooga	
TN	Chattanooga State Technical Community College; Chattanooga	
TN	Chattanooga State Technical Community College; Chattanooga	
TN	Chattanooga State Technical Community College; Chattanooga	Contract
TN	Chattanooga State Technical Community College; Chattanooga	Customized courses
TN	Chattanooga State Technical Community College; Chattanooga	Sharing resources
TN	Columbia State Community College; Columbia	Cooperative
TN	Roane State Community College; Harriman	
TN	Roane State Community College; Harriman	
TN	Roane State Community College; Harriman	
TN	Roane State Community College; Harriman	Cooperative
TN	Roane State Community College; Harriman	Sharing resources
TN	State Technical Institute at Memphis	
TN	State Technical Institute at Memphis	Cooperative
TN	Tennessee Industrial Training Service; Nashville	
TN	Tennessee Industrial Training Service; Nashville	
TN	Tennessee Industrial Training Service; Nashville	
TN	Tennessee Industrial Training Service; Nashville	
TN	Tennessee Industrial Training Service; Nashville	Cooperative
TN	Tennessee Industrial Training Service; Nashville	Customized courses
TX	Austin Community College; Austin	
TX	Austin Community College; Austin	
TX	Austin Community College; Austin	
TX	Austin Community College; Austin	Customized courses
TX	Brazosport College; Lake Jackson	Cooperative

ALPHABETICAL LISTING OF EDUCATIONAL INSTITUTIONS AND TYPES OF IDENTIFIED TRAINING ARRANGEMENTS

ST	INSTITUTION	PROGRAM TYPE
TX	Brazosport College; Lake Jackson	Sharing resources
TX	Lee College; Baytown	
TX	Lee College; Baytown	
TX	Lee College; Baytown	
TX	Lee College; Baytown	Contract
TX	Midland College; Midland	Cooperative
TX	Mountain View Community College; Dallas	Cooperative
TX	North Lake College; Irving	Apprenticeship
TX	North Lake College; Irving	Cooperative
TX	Odessa College; Odessa	
TX	Odessa College; Odessa	
TX	Odessa College; Odessa	Cooperative
TX	Ranger Junior College; Ranger	Cooperative
TX	Vernon Regional Junior College, North Texas Skills Center	Sharing resources
TX	Vernon Regional Junior College, Sheppard Learning Center	Cooperative
UT	College of Eastern Utah; Price	
UT	College of Eastern Utah; Price	Cooperative
UT	College of Eastern Utah; Price	Sharing resources
UT	Uintah Basin Area Vocational Center; Roosevelt	Cooperative
UT	Utah Technical College at Provo/Orem; Provo	Cooperative
UT	Utah Technical College at Provo/Orem; Provo	Cooperative
UT	Utah Technical College at Provo/Orem; Provo	Customized courses
UT	Utah Technical College at Provo/Orem; Provo	Sharing resources
VA	Temple School; Bailey's Crossroads	
VA	Temple School; Bailey's Crossroads	
VA	Temple School; Bailey's Crossroads	Cooperative
VA	Wytheville Community College; Wytheville	
VA	Wytheville Community College; Wytheville	
VA	Wytheville Community College; Wytheville	
VA	Wytheville Community College; Wytheville	
VA	Wytheville Community College; Wytheville	Cooperative
VA	Wytheville Community College; Wytheville	Customized courses
WA	Big Bend Community College; Moses Lake	Cooperative
WA	Big Bend Community College; Moses Lake	Sharing resources
WA	Clover Park Vocational-Technical Institute; Tacoma	
WA	Clover Park Vocational-Technical Institute; Tacoma	
WA	Clover Park Vocational-Technical Institute; Tacoma	
WA	Clover Park Vocational-Technical Institute; Tacoma	
WA	Clover Park Vocational-Technical Institute; Tacoma	
WA	Clover Park Vocational-Technical Institute; Tacoma	Cooperative
WA	Columbia Basin College; Pasco	Cooperative
WA	Columbia Basin College; Pasco	Sharing resources
WA	Edmonds Community College; Lynwood	
WA	Edmonds Community College; Lynwood	Contract
WA	Edmonds Community College; Lynwood	Sharing resources
WA	Walla Walla Community College; Walla Walla	Sharing resources
WI	Lakeshore Technical Institute; Cleveland	Cooperative
WI	Lakeshore Technical Institute; Cleveland	Sharing resources
WI	Mid-State Technical College; Marshfield	Cooperative
WI	Milwaukee Area Technical College; Milwaukee	Cooperative

ALPHABETICAL LISTING OF EDUCATIONAL INSTITUTIONS AND TYPES OF IDENTIFIED TRAINING ARRANGEMENTS

ST	INSTITUTION	PROGRAM TYPE
WI	Milwaukee Area Technical College; Milwaukee	Sharing resources
WI	North Central Technical Institute; Wausau	Cooperative
WI	Waukesha County Technical Institute; Pewaukee	Cooperative
WV	Fairmont State College: Fairmont	Cooperative
WY	Casper College: Casper	Cooperative